Leica M500 OH3

User manual

10 711 894 – Version -

Leica

MICROSYSTEMS

Introduction 3

Operating elements 9

Preparation before surgery 12

After surgery 13

Operation 14

Accessories 31

Safety precautions 34

Care and maintenance 38

What to do if... 40

Technical data 43

	Page
Introduction	
User manual	3
Product identification	3
Symbols used in this manual	3
Overview	4
Function	6
Operating elements	
Leica M500 N microscope with microscope carrier	9
Control unit	10
Footswitches	11
Mouth switch	11
Preparation before surgery	
Transportation	12
Preparations before surgery	12
Performing function checks	13
Positioning at operating table	13
After surgery	
Tasks to be completed after surgery	13
Operation	
Setting/releasing footbrakes	14
Locking the Leica M500 OH3	14
Selecting XYZ-Free/Focus-Lock brakes	15
Balancing out the Leica M500 OH3	15
Switching on illumination	18
Switching from main illuminator to backup illuminator	18
Setting light field diameter of illumination field and working distance	19
Lock/release multifocal focus	19
Selecting name of operating doctor at control unit	20
Determining dioptres for users	21
Setting up eyepieces	21
Attaching protective glass to eyepiece	21
Attaching sterile operating elements	22
Operation of control unit	22
Settings at control unit	23
Controlling zoom and focus	28
Pulling in additional cables	29
Changing wheel counterweight at D axis	30
Accessories	
180° dual stereo attachment	31
Binocular tube; can be tilted; with variable viewing angles 30°–150°	31
Stereo/second-observer attachment	31
Beam splitter with counterweight	31
Video-zoom tube	32
Adapter piece for accessories of the M 600 series	32
Beam splitter	32
Dual Imaging Color Module DI C500	32
Ultra Observer ULT500	32
Mounting accessories	33

	Page
Safety precautions	
Intended use of instrument	34
Directions for the person responsible for the instrument	34
Directions for the user	34
Dangers of use	35
Labelling	36
Care and maintenance	
Care instructions	38
Replacing lamps	38
Replacing fuses	39
Operational check	39
What to do if...?	
General faults	40
TV, photography	42
Error messages at control unit	42
Technical data	
Electrical data	43
Leica M500 N	43
Accessories	43
Floor stand	44
Standards	44
Environmental conditions	44
Limitations on use	44
Dimensional drawings	45

User manual

This user manual contains important safety precautions as well as information on setting up the instrument (see the chapter entitled «Safety precautions»).
Before attempting to set up the product carefully read through the user manual.

Product identification

The model and serial number of your product are located on the identification label on the illumination unit. Copy this information into your user manual and always refer to it if you have questions for our representatives or service locations.

Model: Serial No.:

Symbols used in this manual

The symbols used in this user manual have the following meaning:

Warning This indicates a potentially hazardous situation which could result in death or serious injury.

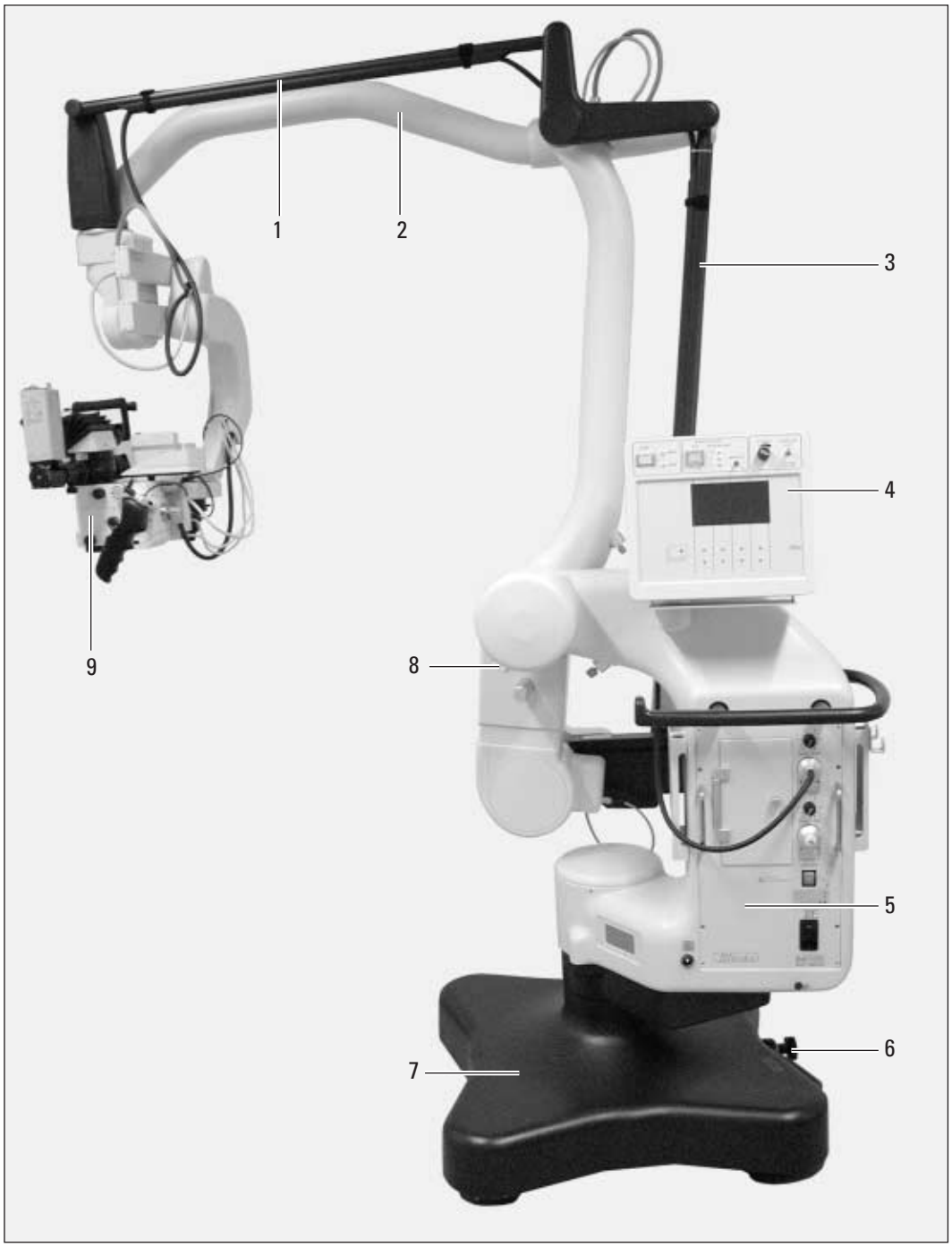
Caution Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury and/or appreciable material, financial and environmental damage. It may also be used to alert against unsafe practices.

Important paragraphs, which must be adhered to in practice as they enable the product to be used in a technically-correct and efficient manner.

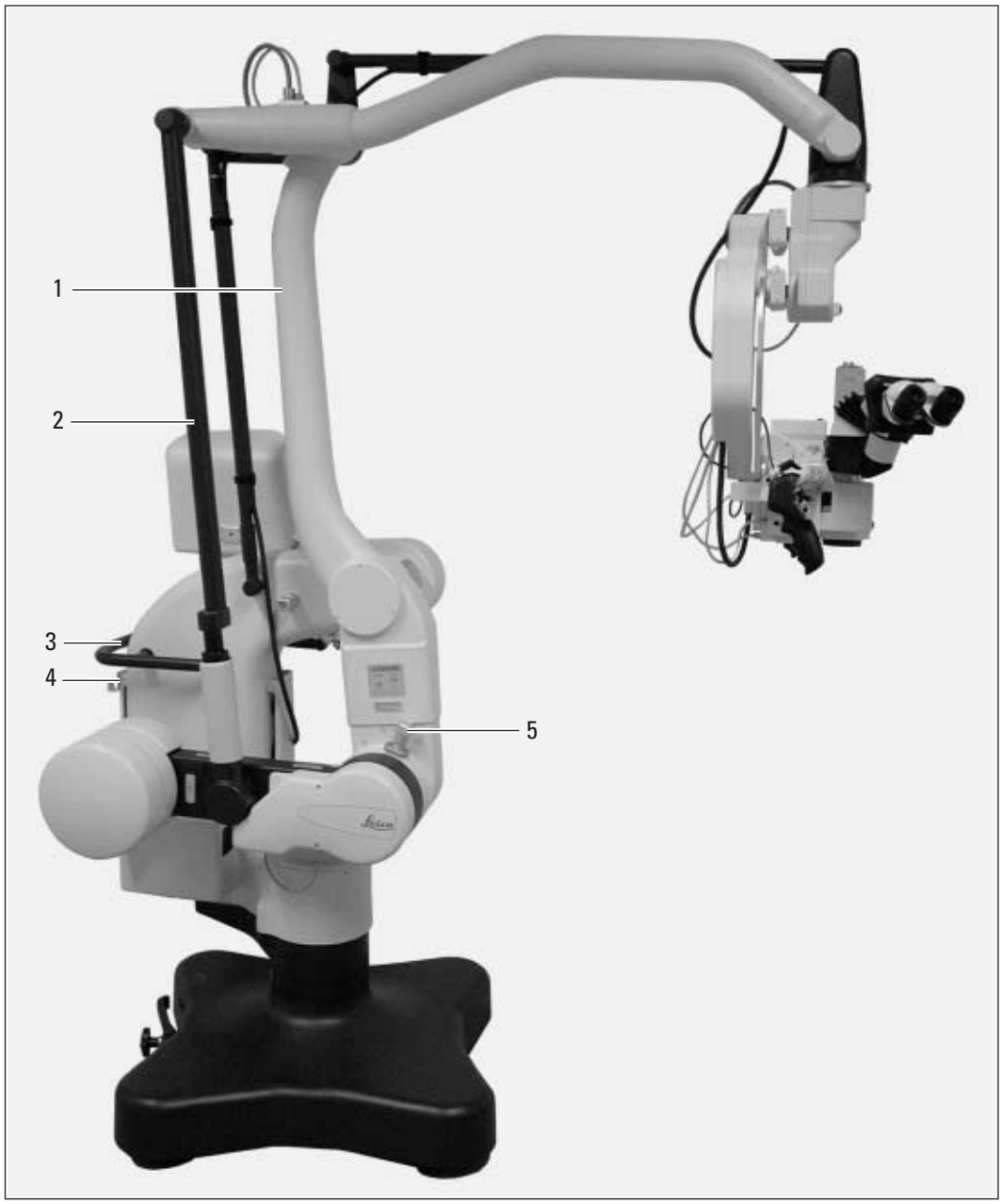
⇨ Indicates that you have to do something.

Overview

Leica M500 OH3 surgical microscope system



1 Horizontal cable channel
2 Swing arm
3 Vertical cable channel
4 Control unit
5 Illumination unit
6 Footbrake
7 Foot
8 Locking knob
9 Leica M500 N microscope

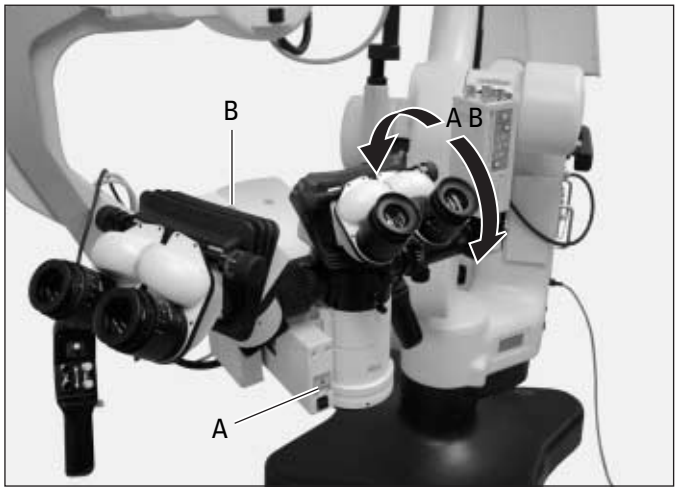


1 Vertical arm
2 Tension rod
3 Handle
4 Footswitch holder
5 Locking knob

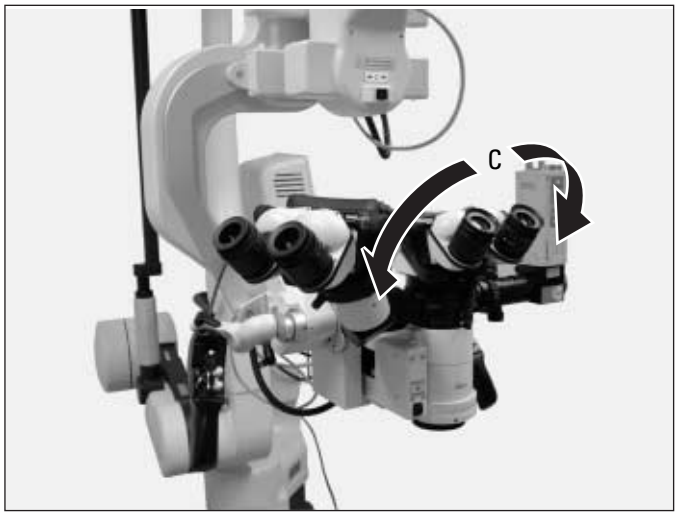
Function

Balancing system and brakes
The Leica M500 OH3 surgical microscope consists of the Leica M500 N surgical microscope and the Leica OH3 floor stand.

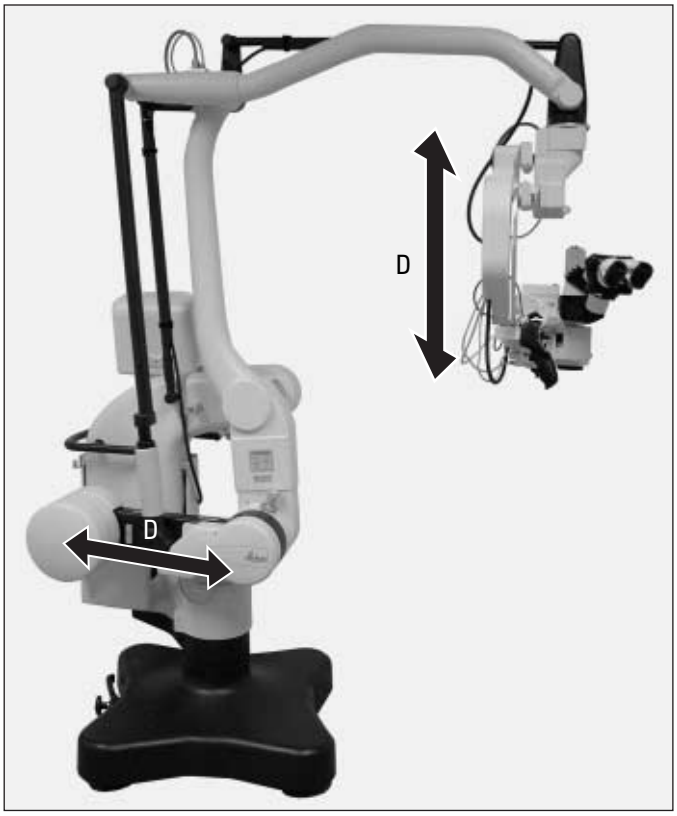
The stand and surgical microscope are balanced out by the balancing system. All movements which must be carried out during the surgery require only minimal force.
The AB swivel movement is balanced out via the A and B pinion.



Movement C is balanced out at the microscope carrier.

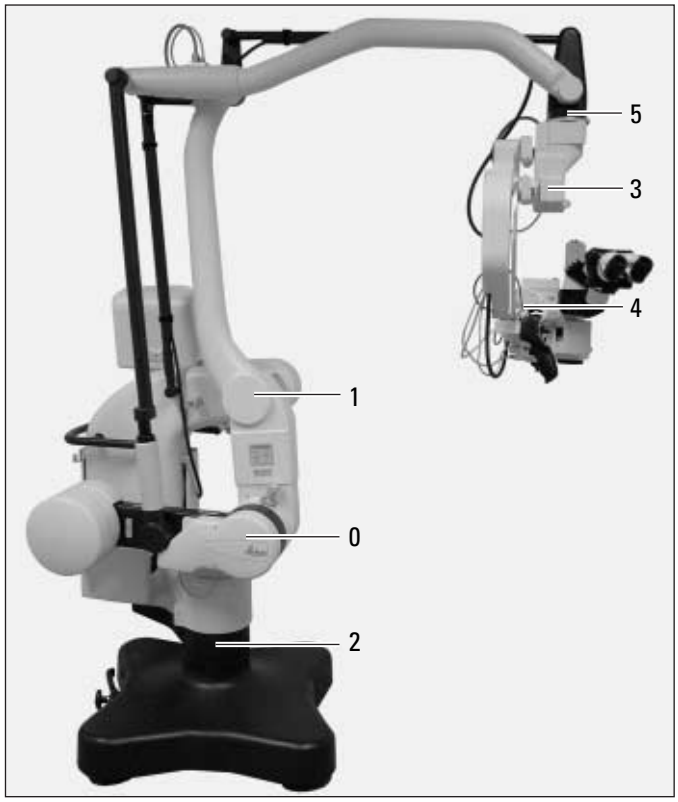


The internal weight of the stand balances the weight of the surgical microscope and the fitted accessories (movement D).

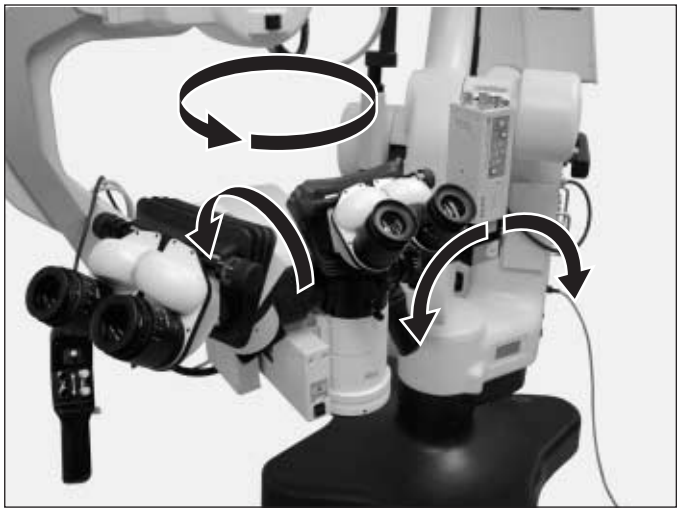


There are 6 electromagnetic brakes on the Leica M500 OH3 surgical microscope, which block movement of the base and surgical microscope:

- up/down and forward/backward in a parallelogram (0 and 1)
- at base (2)
- in microscope carrier (3)
- at A and B sledges of the surgical microscope (4)
- in rotatable joint (5)

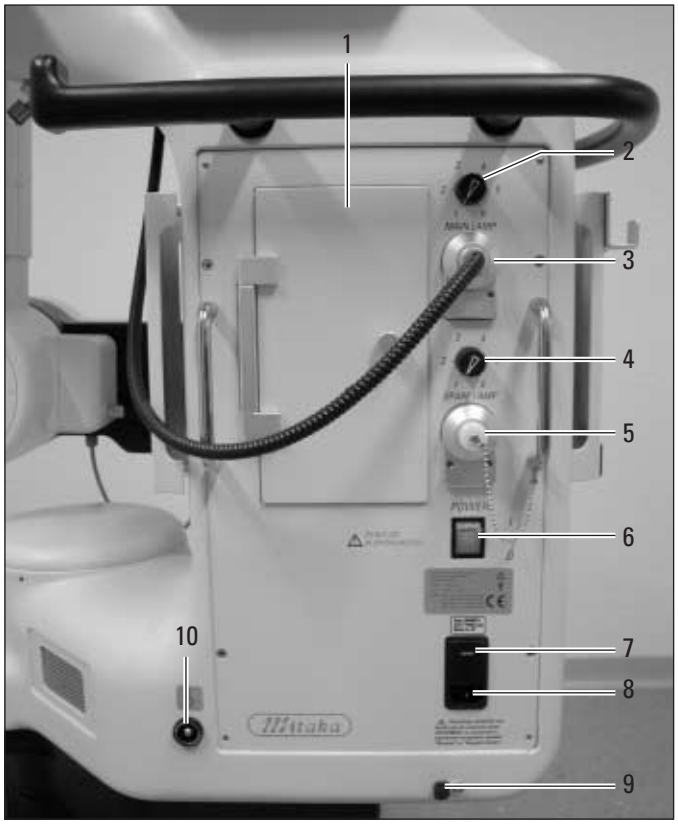


Using the selector switch (Item 10, Page 10) for brakes (XYZ FREE or FOCUS LOCK) at the control unit, two different brake groupings can be selected.
The following movements with the surgical microscope can still be performed if the selector switch is located in the FOCUS LOCK position:



The following movements with the surgical microscope can be performed if the selector switch is located in the XYZ FREE position:

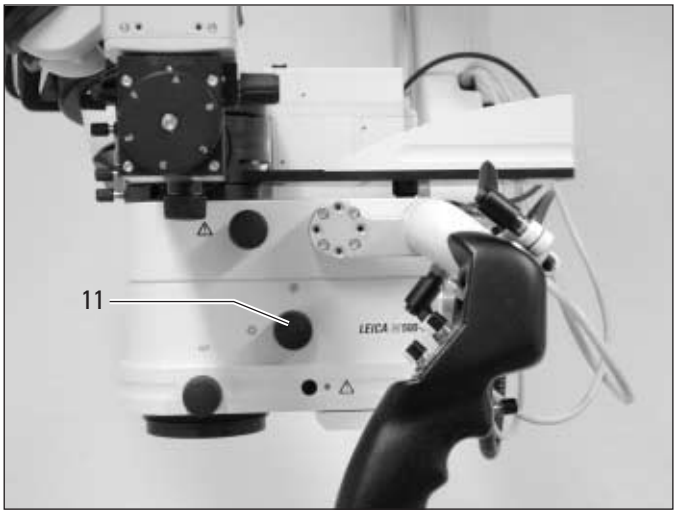
Illumination
The illumination of the Leica M500 OH3 surgical microscope consists of a main illuminator and a backup illuminator.
They are located in the illumination unit.
The main and backup illuminators consist of xenon lamps. The light of the main and backup illuminators is lead to the optics carrier via a fibre-optic cable through the base.
If the main illuminator fails, the plug of the fibre-optic cable is switched over to the backup illumination.



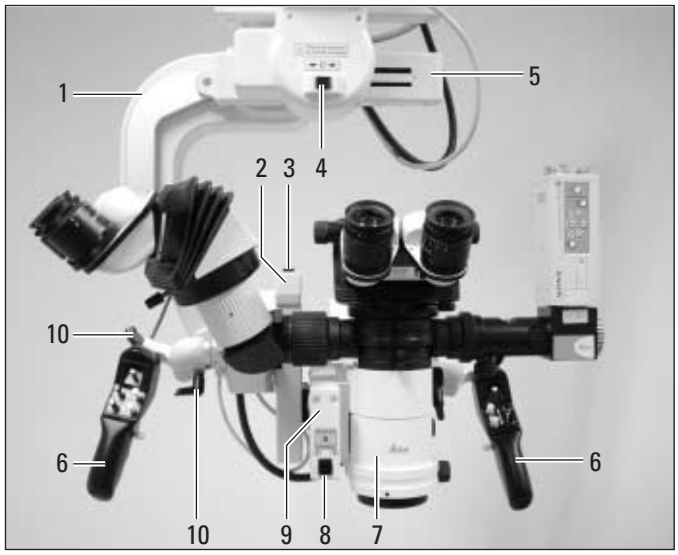
1 Access hatch for lamp inserts of main and backup illuminators
2 Regulating knob for brightness of main illuminator
3 Outlet for fibre-optic light guide of main illuminator
4 Regulating knob for brightness of backup illuminator
5 Outlet for fibre-optic light guide of backup illuminator
6 Power switch of Leica M500 OH3 surgical microscope
7 100 V/120 V/220 V/240 V switch
8 Power connection
9 Pullout fuse for power cable
10 Potential equalisation connector

Two LEDs at the control unit indicate which illuminator is being used at the moment (see Page 18).

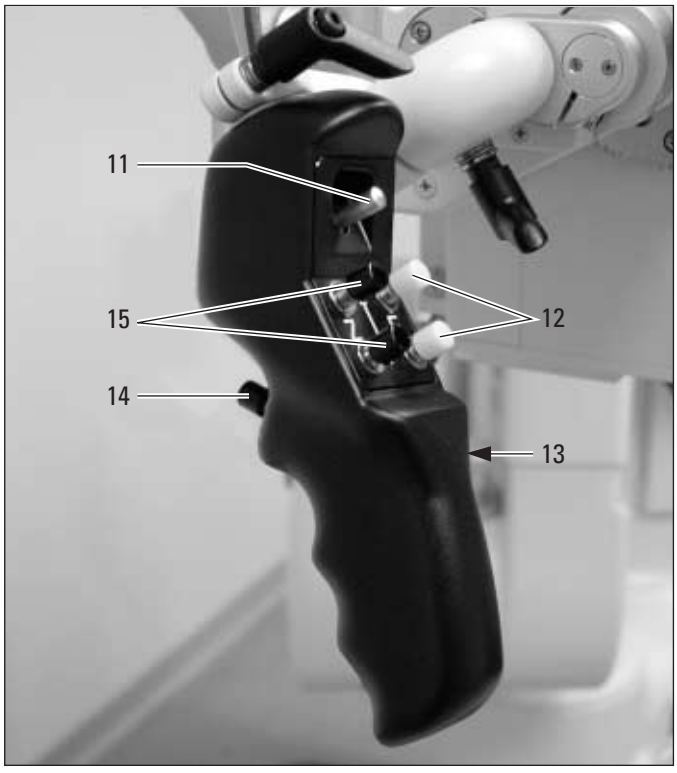
The light field diameter can be concentrated at the optics carrier with the rotary knob (11).



Leica M500 N microscope with microscope carrier

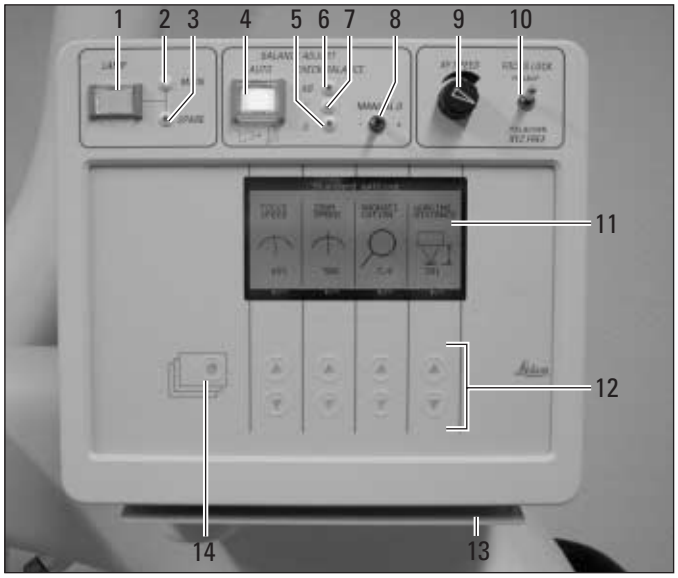


1 Microscope carrier
2 B sledge
3 Switch for manual balancing of the B sledge
4 Switch for manual balancing of the C sledge
5 C sledge
6 Handgrip
7 Optics carrier
8 Switch for manual balancing of the A sledge
9 A sledge
10 Handgrip clamping lever

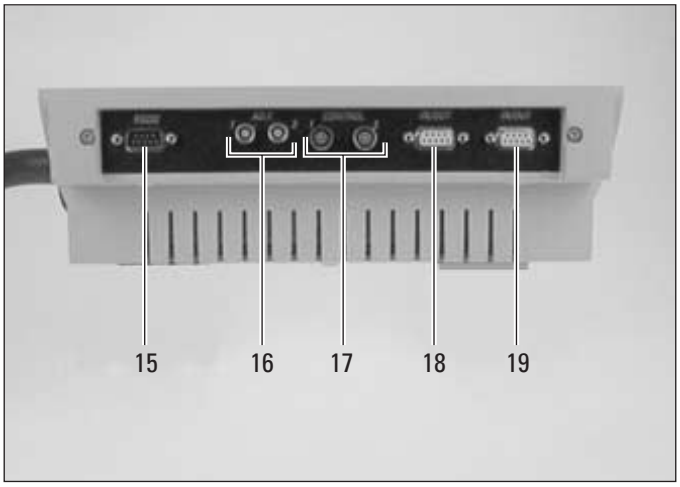


Handgrips (Item 6):
11 Joystick (selectable for XY movement or for menu control in DI C500)
12 Focus
13 Selector button (three brakes)
14 ALL-FREE button (all brakes)
15 Zoom

Control unit

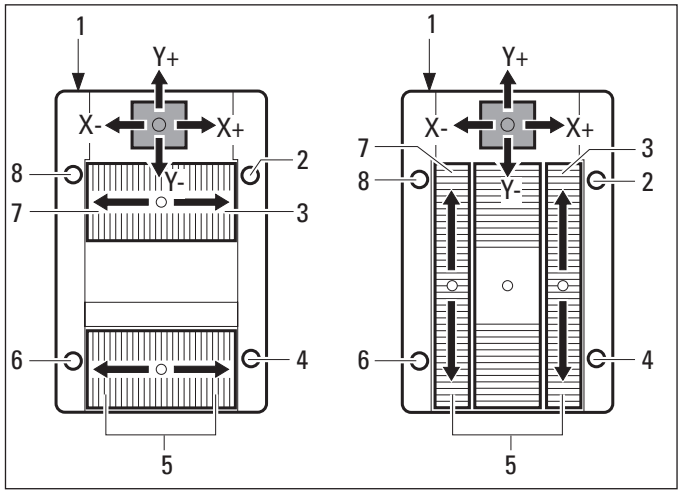


1 Pushbutton for illumination (on/off)
2 LED for main illuminator
3 LED for backup illuminator
4 Pushbutton for auto balance with protective flap
5 LED for balancing of D axis
6 LED for balancing of A/B axis
7 LED for balancing of C axis
8 Toggle switch for manual balancing of D axis
9 Regulating knob for movement speed of the X/Y axes
10 Selector switch for brakes:
- XYZ-Free
- Focus-Lock
11 Display
12 Arrow keys
13 Cover for connections
14 Display key for menu control



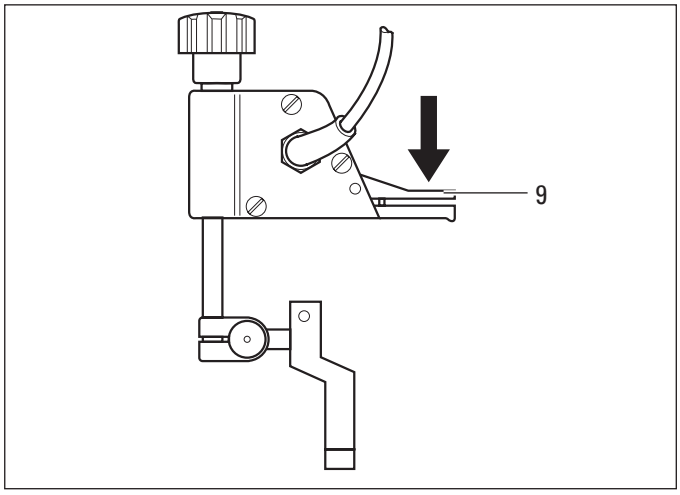
Connections on the underside of the control unit (cover for connections, Item 13 removed):
15 RS-232 interface
16 On/Off connection for external device
17 Footswitches 1 and 2
18 CAN bus interface
19 CAN bus interface

Footswitch



1 Adjustable supports
2 DI C500: Activate/deactivate imaging (On/Off)
3 Focus, short working distance
4 DI C500: Individual switching of shutters
DI C500 with IGS workstation: ENTER menu
5 Zoom (freely configurable; for default configuration, see Page 25)
6 DI C500: Decrease the brightness of the displayed image
DI C500 with IGS workstation: Menu scroll down
7 Focus, long working distance
8 DI C500: Increase the brightness of the displayed image
DI C500 with IGS workstation: Menu scroll up

Mouth switch



9 Brakes XYZ FREE

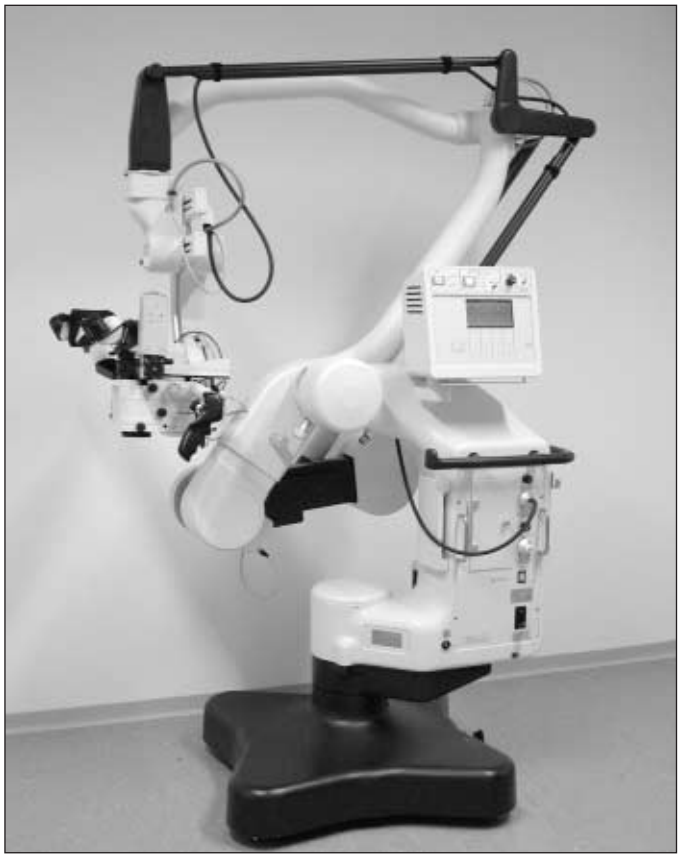
Transportation

Warning
Risk of injury by:
- **Uncontrolled swinging out of swing arm!**
- **Tilting of the stand!**
- **Feet in lightweight shoes can become trapped beneath the base!**

⇨When transporting the surgical microscope, always return it to the transport position.
⇨Always push the surgical microscope, never pull it.

Caution
Microscope can be damaged by uncontrolled tilting over!
⇨Hold the handgrips firmly before pressing the ALL-FREE button.

⇨Press the ALL-FREE button and bring the Leica M500 OH3 into the transport position (see figure below).



⇨Release footbrakes (see Page 14).
⇨Move Leica M500 OH3 via handgrip.

Preparations before surgery

Cleaning optical accessories
⇨Inspect the cleanliness of the eyepieces and objective as well as any photo or TV adapters as appropriate.
⇨Remove dust and dirt.

Mounting accessories

Warning
Mortal danger from electrical shock!
⇨Connect the Leica M500 OH3 surgical microscope to an earthed outlet only.

⇨Lock the Leica M500 OH3 (see Page 14).
⇨Connect power cable.
⇨Switch on power switch.
⇨Set footbrakes (see page 14).
⇨Outfit microscope with all accessories for use.
⇨Position hand/mouth switch.
⇨Position handgrips as needed for the forthcoming surgery.
⇨Screw off cover of connections (Item 13, Page 10), connect provided footswitch and check settings (see Page 25).

Balancing out microscope
⇨Balance out the Leica M500 OH3 (see Page 15).
⇨Release locks (see Page 14).

Setting up eyepieces
⇨Set eye-base and pupil-base (see Page 19).
⇨Set dioptre values for users (see Page 21).

Configuring control unit
⇨See the section entitled «Operation of the control unit», Page 22.
⇨Check settings of the handgrips (DIC function or XY movement) (see Page 26).
⇨Inspect all connections and make certain that all accessories are seated firmly.

Performing function checks

Illumination

Always allow the main and backup illuminators to remain lit for at least five minutes, otherwise the lighting capacity will be quickly reduced.

⇨Switch on main illuminator at the illumination unit (see Page 18).
⇨Switch to backup illuminator at the illumination unit (see Page 18).
⇨Switch illumination off again.

Footswitch
⇨Test all functions with the footswitch.

Handgrip
⇨Press the selection and ALL-FREE buttons and check movement.
⇨Set the movement speed of the X/Y axes with the regulating knob (Item 9, Page 10) if necessary.

TV camera/monitor and still-photo camera
(if present)
⇨Check the image on the TV monitor.
⇨Align TV and SLR camera to the microscopic image.
⇨For photographs: Insert daylight film.

Sterility
⇨Attach sterile components and sterile drapes (see Page 22).

Balancing out microscope
⇨Balance out the Leica M500 OH3 (see Page 15).
⇨Press the ALL-FREE button and check balancing.

Positioning at operating table

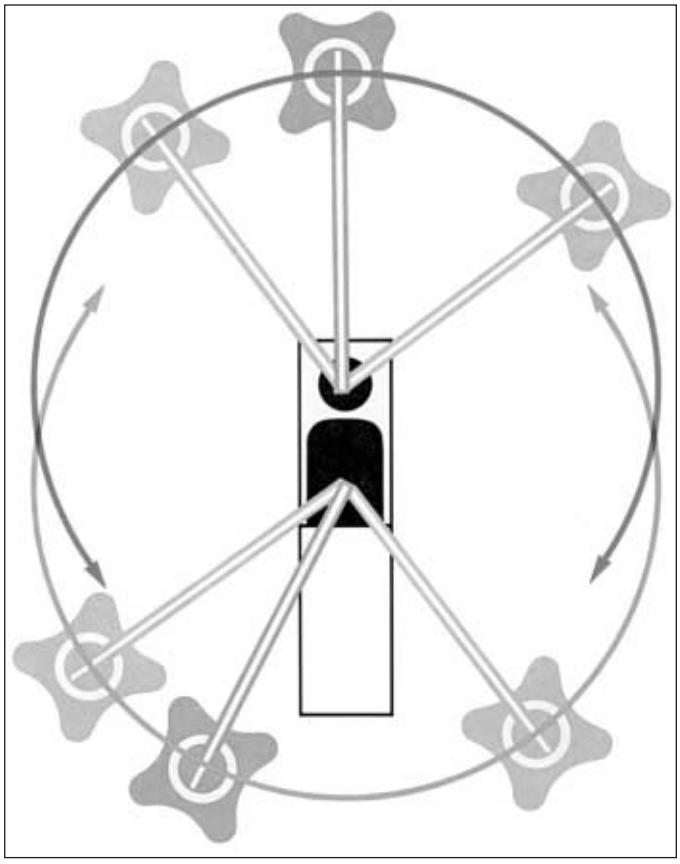
Warning
Risk of injury from tilting surgical microscope!
⇨Never change the accessories or attempt to rebalance the microscope while it is over the field of operation.
⇨Lock the Leica M500 OH3 each time before changing accessories.
⇨Balance out the Leica M500 OH3 each time after changing accessories.
⇨Do not release brakes in an unbalanced state.

Positioning the Leica M500 OH3 at the operating table is quite easy and offers a multitude of options, whether it be for surgery at the head, spinal column, etc.

This freedom to choose your position with the M500 OH3 is thanks to the extra-long and high swing arm.

⇨Release footbrakes (see Page 14).
⇨Carefully move the Leica M500 OH3 surgical microscope to the operating table and position it for the forthcoming surgery.

Positioning possibilities:



⇨Set footbrake.
⇨Position footswitch.
⇨Connect potential equalisation.

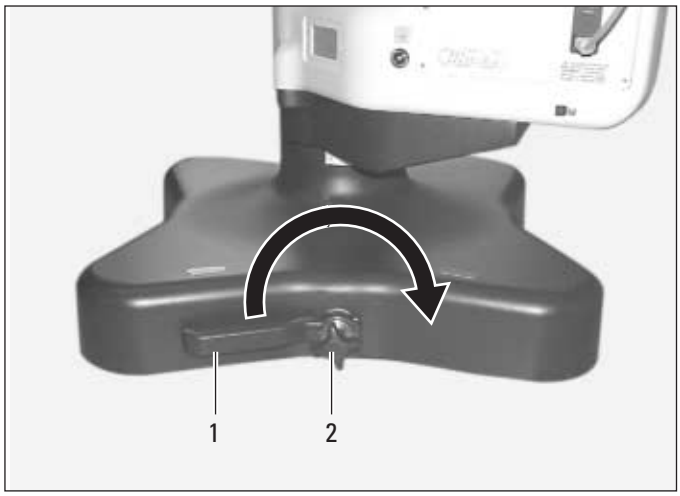
Tasks to be completed after surgery

⇨Swing microscope away.
⇨Move Leica M500 OH3 to the transport position and out of the operating area.
⇨Remove sterile components.
⇨Lock the Leica M500 OH3.
⇨Move the Leica M500 OH3 to the parked position.

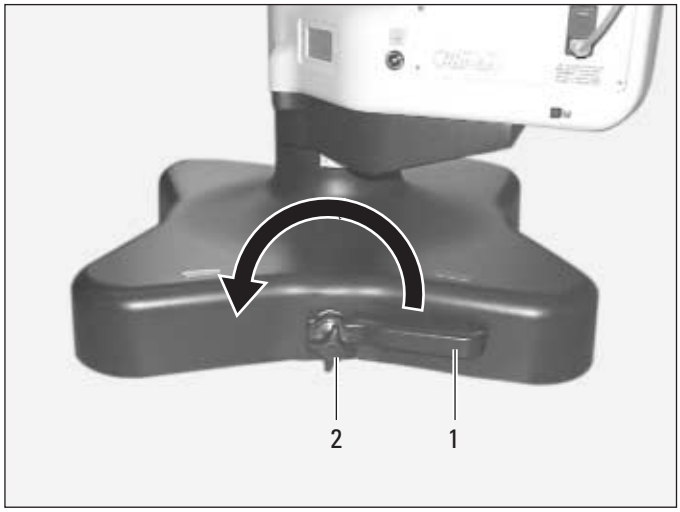
Setting/releasing footbrakes

Warning
Surgical microscope can move without warning!
⇨Always set footbrakes, except during transport.

Setting footbrakes
⇨Loosen star grip (2).
⇨Turn lever for footbrake (1) to the right.
⇨Tighten star grip again.



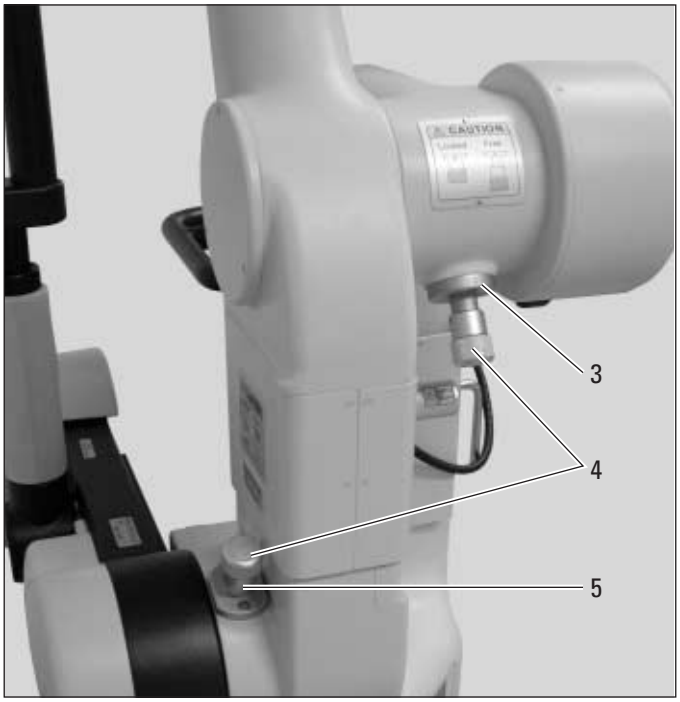
Releasing footbrakes
⇨Loosen star grip (2).
⇨Turn lever for footbrake (1) to the left.
⇨Tighten star grip again.



Locking the Leica M500 OH3

The D axis of the Leica M500 OH3 is locked when locking is performed.
Locking is mainly used for installation and accessory-change at the Leica M500 OH3.

⇨Pull out and turn locking knobs (4) until both points (arrows) are aligned.



⇨Move swing arm up and down until the lock (5) engages.
⇨Move swing arm forward and backward until the lock (3) engages.

Selecting XYZ-Free/Focus-Lock brakes

⇨Pull the selector switch (Item 10, Page 10) and tilt to the desired brake grouping (XYZ FREE or FOCUS LOCK).
⇨Press selector button (1) on handgrip.
The set movements can be made.

Balancing out the Leica M500 OH3

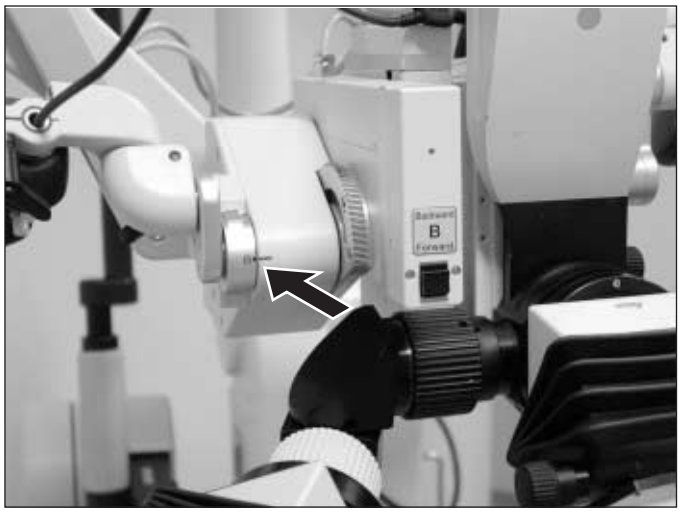
Warning
Risk of injury by movements of the microscope during balancing out.
⇨Do not remain in the immediate vicinity of the microscope during balancing out.

⇨Switch on the Leica M500 OH3.
⇨Mount accessories in the permissible weight range (see technical data on Page 43).

⇨Move the Leica M500 OH3 to the approximate working position.
⇨Press the ALL-FREE button and position the microscope carrier so that the line (2) points to A.

⇨Lift the protective flap and press the pushbutton (3) for auto balance.
The pushbutton flashes orange and an audible signal is emitted for the duration of the balancing procedure.

⇨When the audible signal stops, press the ALL-FREE button and swivel the microscope carrier into position B (arrow) until it engages.



If the mounted accessories (e.g. the tube) do not permit the 90° swivel movement, turn the tube upward, perform the swivel movement and then ensure that you turn the tube back to the working position.

⇨Lift the protective flap and press the pushbutton (Item 3, Page 15) again for auto balance.
The pushbutton flashes orange and an audible signal is emitted for the entire duration of the balancing procedure for the B, C and D axes.

Balancing is complete when the pushbutton for auto balance illuminates green and none of the three LEDs (Item 4, 5 or 6, Page 15) illuminates.
If one of the three LEDs illuminates, balancing must be checked:
⇨Press the ALL-FREE button and check balancing.
Correct balancing manually if necessary.

Correcting balancing manually

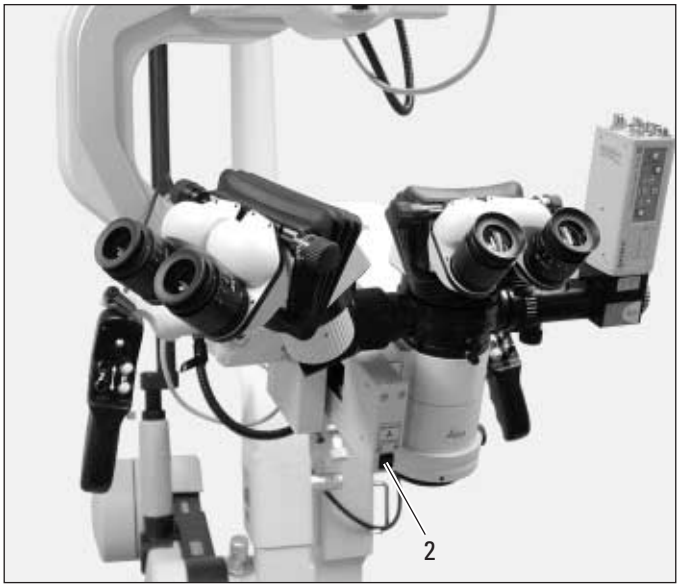
Ensure that no accessory parts collide with the microscope when balancing manually.

As the LEDs (Item 4, 5 and 6, Page 15) also show very slight balance deviations, the manual balance correction may only be performed for perceptible deviations.

⇨Press the ALL-FREE button.

The microscope tilts to the side:
⇨Press the C (1) button until the microscope is balanced out.

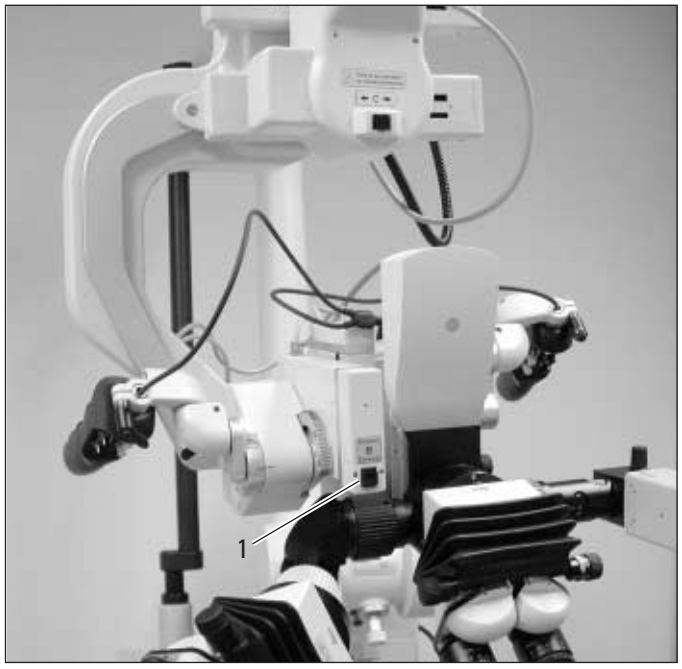
The microscope swivels to the front or back:
⇨Press the A (2) button until the microscope is balanced out.



⇨Press the ALL-FREE button and swivel the microscope carrier into position B until it engages.

If the mounted accessories (e.g. the tube) do not permit the 90° swivel movement, turn the tube upward, perform the swivel movement and then ensure that you turn the tube back to the working position.

⇨Press the B (1) button until the microscope is balanced out.



The microscope moves upward:
⇨Press the selector switch (2) to the left (–) until the microscope is balanced out.

The microscope moves downward:
⇨Press the selector switch (2) to the right (+) until the microscope is balanced out.

If the microscope cannot be balanced manually, the accessories are probably not in the balanceable weight range.
This can be solved for the A/B/C axes by decreasing/increasing the accessory weight in the acceptable range (8 kg–11.7 kg of accessories).
The D axis can be adapted by the number of wheel counterweights (see Page 30).

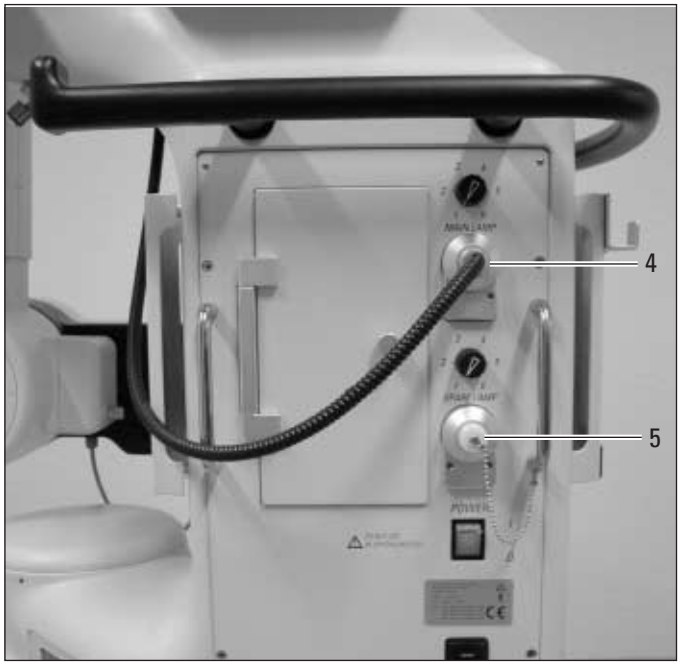
Switching on illumination

Always allow the main and backup illuminators to remain lit for at least five minutes, otherwise the lighting capacity will be quickly reduced.

⇨Press pushbutton (1) for illumination.
The illumination is activated, the pushbutton illuminates green and the LED (2) for the main illuminator or the LED (3) for the backup illuminator illuminates.

Switching from main illuminator to backup illuminator

⇨Unplug the fibre-optic light guide at connector (4) of the main illuminator.
The pushbutton (6) for illumination flashes orange and the LED (7) for the main illuminator goes out.



⇨Insert the fibre-optic light guide into the connector (5) of the backup illuminator and press the pushbutton (6) for illumination.
The pushbutton for illumination illuminates green and the LED for the backup illuminator (8) illuminates orange.

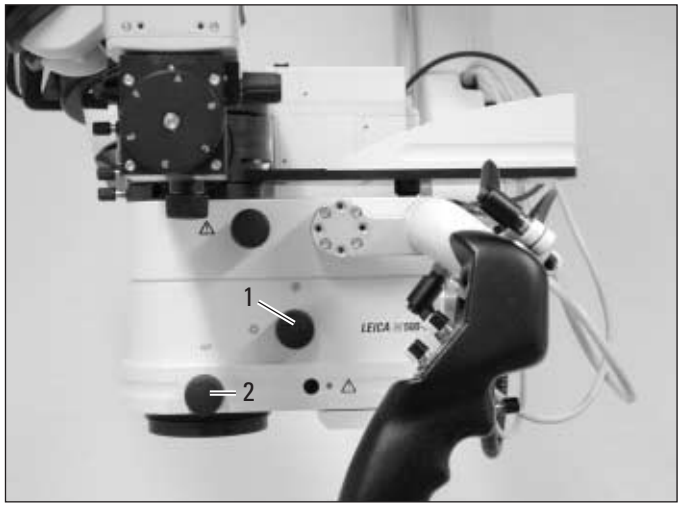
Replace defective illumination at the next opportunity and reinsert the fibre-optic light guide into the connector of the main illuminator again.

Setting light field diameter of illumination field and working distance

Warning
Severe damage to tissue can result from an incorrect working distance!
⇨When working with lasers, always set the working distance of the microscope to the laser distance and lock it there.

Warning
Severe injury to tissue can result from manual adjustment of the working distance!
⇨The rotary knob may not be adjusted for manual adjustment of the working distance while the laser is in use.

⇨Set the required working distance with the focus buttons on the handgrip/footswitch or, if a fault occurs, manually with the rotary knob (2).
⇨Set the desired light field diameter/brightness with the rotary knob (1).

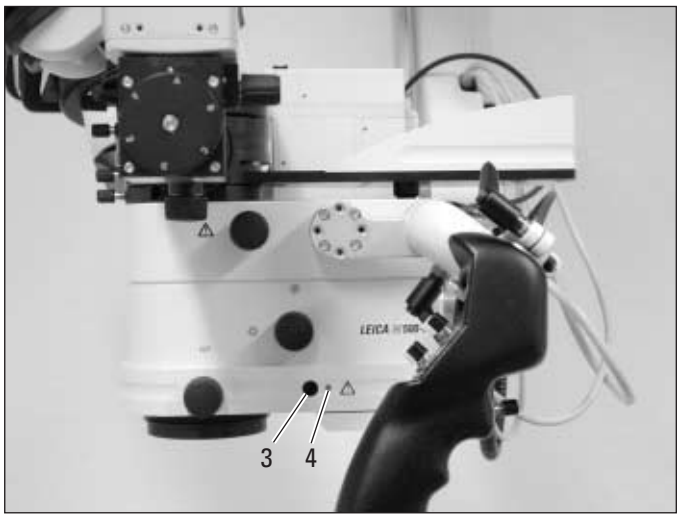


Lock/release multifocal focus

Locking the focus is necessary when using a fixed working distance or when working with a laser.

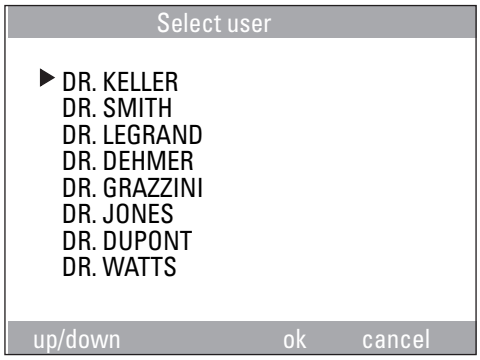
⇨Press button (3).
The yellow LED (4) illuminates and the focus is locked.

⇨Press button (3) again.
The yellow LED (4) goes out and the focus is released.

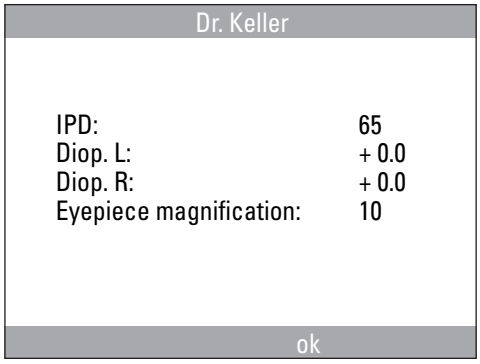


Selecting name of operating doctor at control unit

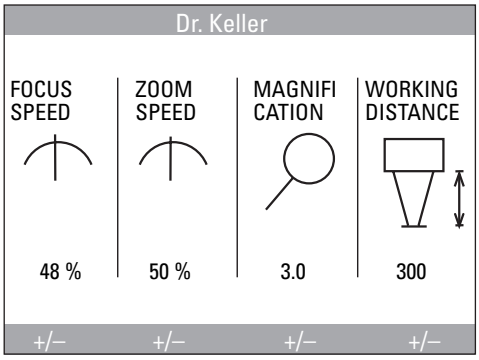
⇨Call up main menu 1 at the control unit with the display key.
⇨Select the entry «Change user» in main menu 1 with the arrow keys «up/down» and confirm with «ok».
⇨Select the name of the operating doctor with the arrow keys «up/down» and confirm with «ok».



The dioptre values, eye-base and eyepiece magnification of the selected doctor are shown in the display.



⇨Set values at the eyepiece/tube.
⇨Confirm with «ok» (for information on changing settings, see the chapter entitled «Changing eye-base, dioptre values and eyepiece magnification», Page 24).
The values for focus and zoom speed, magnification and working distance of the selected doctor are shown in the display.



⇨For changing the displayed values, see «Setting focus and zoom speed, magnification and working distance», Page 24.

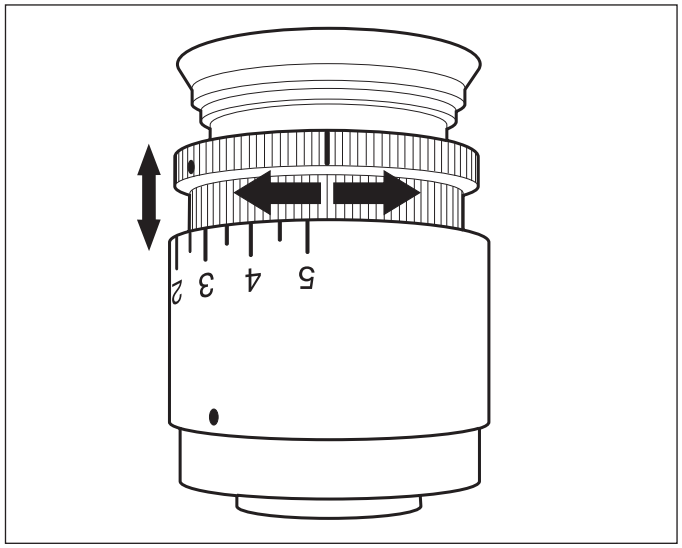
Determining dioptres for users

The individual dioptres can be regulated continuously from +5 to –5.
The treatment microscope ensures a high degree of fatigue resistance when the dioptre setting is correct for both eyes.

Preparations
⇨Open any double-iris diaphragm used.
⇨Turn both eyepieces to <0>.

Sharpening test object image:
⇨Select magnification 13.7.
⇨Place a flat test object with sharp contours under the eyepiece at the working distance.
⇨Move the microscope toward the test object via the camera or graticule until it appears sharp.

Setting dioptre
⇨Select the lowest magnification (magnification 6.4).
⇨Without looking into the eyepieces, turn both eye lenses to +5.



⇨Slowly turn the eyelenses toward –5 individually for each eye until the test object appears sharp.

Checking the setting
⇨Select the greatest magnification (magnification 13.7).
⇨Check sharpness and adjust if necessary.

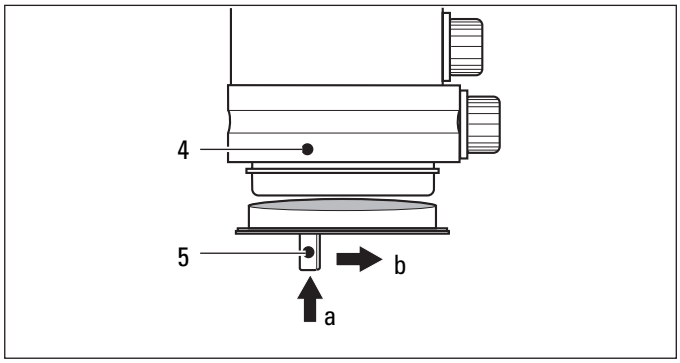
Setting up eyepieces

Setting dioptre values for users
The dioptrics are to be set exactly separately for both eyes; only then does the sharpness remain constant within the entire zoom range = parfocal.
⇨Read dioptre values of the operating doctor at the control unit (see Page 20).
⇨Set dioptre values at each eyepiece individually with the setting ring (2).

Setting eye-base and pupil-base
⇨Set eye-base with setting wheel (3).
⇨Set pupil-base with rotating ring (1).

Attaching protective glass to eyepiece

⇨Place the protective glass, which can be sterilised with gas, on the eyepiece so that the markings on the optics carrier (4) and on the protective glass (5) are aligned.



⇨Lead protective glass into the bayonet lock upward in direction (a).
⇨Turn protective glass in direction (b) until it engages.

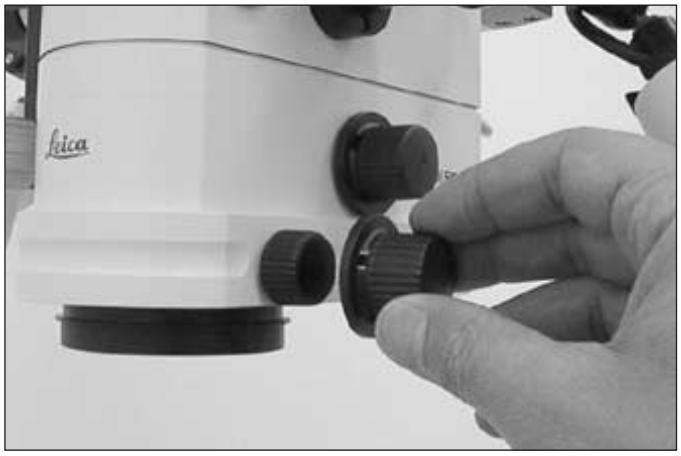
Attaching sterile operating elements

Rotary knobs of the Leica M500 OH3 surgical microscope can be provided with covers which can be sterilised.

Covers for rotary knobs

☞ Also attach the covers if you are using sterile disposable covers.
The operating elements are then easier to grip.

⇨Slide covers, which can be sterilised with steam, over the adjusting knob for the light field diameter and the adjusting knob for the working distance.



⇨Attach covers, which can be sterilised with steam, to accessories as well (if present).

Cover for footswitch

⚠ **Caution**
Risk of infection!
⇨Provide sufficient open space around the base to prevent the sterile cover being touched by non-sterile parts.

☞ Packing the footswitch in a plastic bag protects it being soiled.

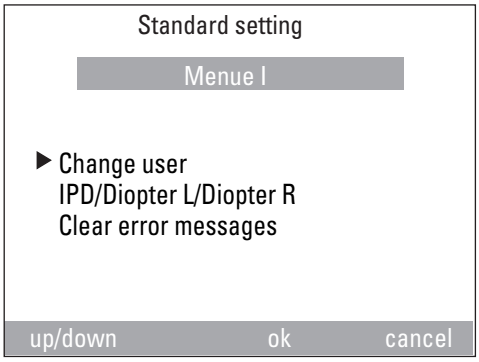
Sterile cover for base
⇨Switch on main illuminator.
⇨Press ALL-FREE button on handgrip and stretch out swing arm.
⇨Wear sterile gloves.
⇨Attach all sterile operating elements.
⇨Carefully unpack sterile cover and pull it over the microscope and swing arm.
⇨Secure protective glass at eyepiece.
⇨Do not fasten sterile cover with accompanying bands too tightly. It must still be possible to move the instrument easily. Check for easy ability to be moved.

Operation of control unit

Functions of control unit
- Save individual settings of the operating doctor
- Save current settings
- Set all motor functions continuously
- Display error messages

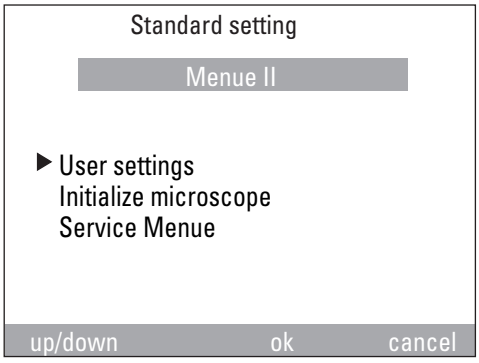
Calling up main menus
⇨Actuate main switch at basic tower.
The control unit is activated.
Zoom and multifocal are initialised.
⇨Call up the three main menus with the display key (Item 14, Page 10).

Functions in main menu 1



- Call up name of the operating doctor (see Page 20)
- Change eye-base, dioptre values and eyepiece magnification (see Page 24)
- Clear displayed error messages (see Page 24)

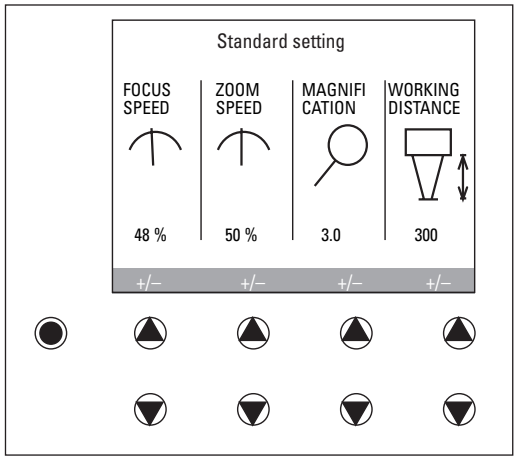
Functions in main menu 2



- Change standard setting (see Page 24)
- Initialise microscope (required if contact with the microscope was interrupted)
- Call up service menu

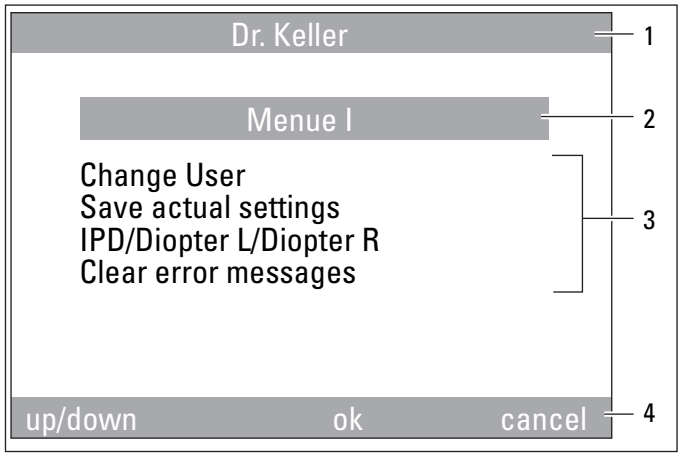
☞ Settings in the service menu may only be made by service technicians.

Functions in main menu 3



- Set focus and zoom speed, magnification and working distance (see Page 24)

Main menu interface



1 Title line
2 Status line
3 User area
4 Activity line

The control unit is always in the «standard setting» mode after switch-on. In this mode, the displayed values can only be checked, not changed. For information on changing standard settings, see Page 24.

The title line (1) of the display shows the name of the doctor whose settings were selected or «standard setting».
The status line (2) indicates the settings which are currently being edited at the control unit or the main menu which is currently active.
The user area (3) shows the selection options from which the user can choose. Exception: error messages and other information.
The activity line (4) shows the effect of the arrow keys located below.

Activity line	Effect
up/down	The pointer in the user area moves up or down when the arrow keys are pressed.
+/–	The selected value increases or decreases.
ok	The selection at which the pointer is currently located is called up.
save, ok/save	The entered value is saved.
cancel	Return to the previous menu field without saving.

Reactivating background lighting

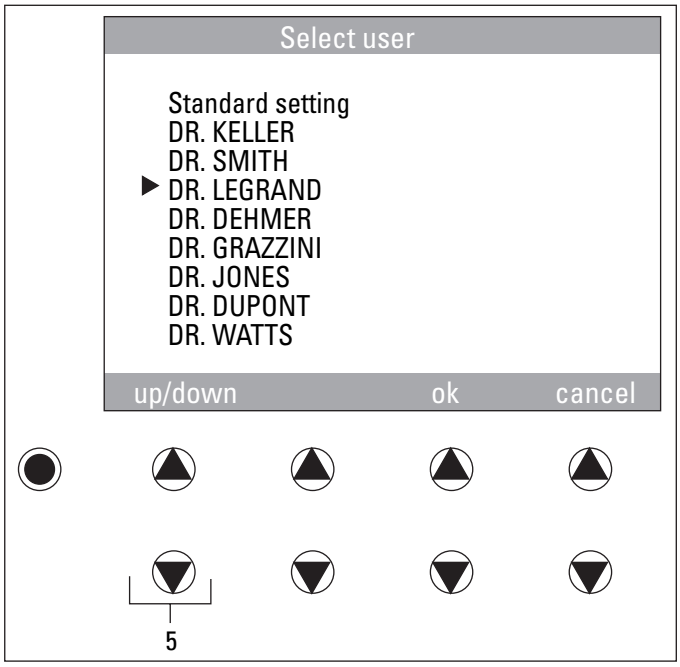
If nothing is entered at the control device for one minute, the display switches to low-power mode and the background lighting goes out.

⇨Press one of the arrow keys or the display key.

Settings at control unit

If a DI C500 module is used, please observe the user settings for the DI C500 at the control unit in the Leica DI C500/Leica ULT500 user manual/installation instructions.

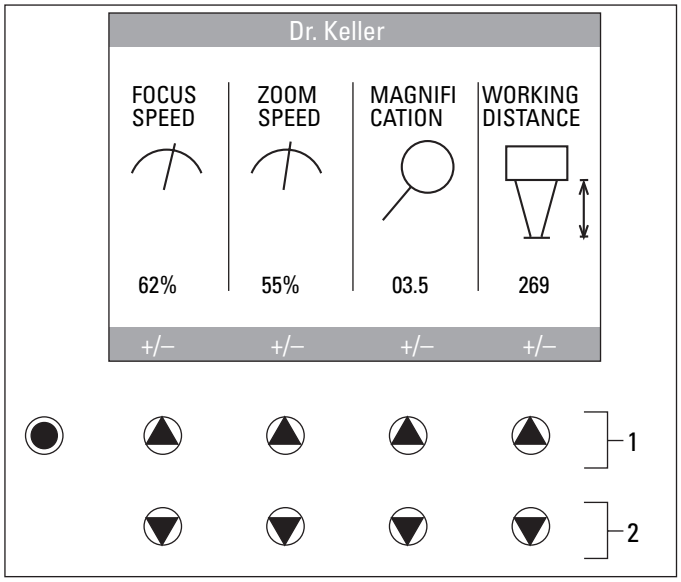
Calling up name of operating doctor



⇨Call up main menu 1 with the display key.
⇨Select «Change user» in main menu 1 with the arrow keys (5) and confirm with «ok».

⇨Select the name of the operating doctor with the arrow keys and confirm with «ok».
The dioptre values, eye-base and eyepiece magnification of the selected doctor are shown in the display.
⇨Check all values and confirm with «ok» (for information on changing settings, see «Changing eye-base, dioptre values and eyepiece magnification», Page 24).
The values for focus and zoom speed, magnification and working distance of the selected doctor are shown in the display.
The displayed values can be changed with the arrow keys and saved as well.

Setting focus and zoom speed, magnification and working distance



The following information is relative to a 10x eyepiece.
⇨Press the ▲ buttons (1).
The values for focus speed, zoom speed and magnification are increased and the value of the working distance increases.
⇨Press the ▼ buttons (2).
The values for focus speed, zoom speed and magnification are decreased and the value of the working distance decreases.

Setting ranges and measurement information

	Speed		Magnification	Working distance
	Focus	Zoom		
Measurement information	**%**	**%**	**factor**	**mm**
Limits	0	0	1.4	407
	100	100	13.7	207

Changing eye-base, dioptre values and eyepiece magnification
⇨Select «Eye-base and dioptre data» in main menu 1 with the arrow keys and confirm with «ok».
⇨Change the eye-base, left and right dioptre value and eyepiece magnification of the selected doctor with «+/-».
⇨When all values are entered, confirm with «Save».

Switching to settings of another doctor
⇨Select «Change user» in main menu 1 with the arrow keys and confirm with «ok».
A list of names appears for doctors who have saved settings at the microscope.
⇨Select the name of the doctor under «Select user» and confirm with «ok».
The settings of the selected doctor are active.

Changing standard setting
The Leica M500 OH3 surgical microscope is supplied from the factory with the standard setting, which can be changed as desired.

☞ If you have changed the standard setting and would like to restore the factory setting, you can load it from the service menu. Only a service technician can make this setting.

⇨Select «Change user» in main menu 1 with the arrow keys and confirm with «ok».
⇨Select «Standard setting» under «Select user» and confirm with «ok».
The standard settings can now be changed.

Clearing error messages
If a fault occurs in the Leica M500 OH3, an error message appears on the display.
⇨Eliminate fault (see the chapter entitled «What to do if...», Page 40).
⇨Go to «Clear error messages» in main menu 1 and confirm with «ok».
The error message is cleared from the display.

Selecting footswitch type
Four different footswitches are available.
⇨Go to «User settings» in main menu 2 and confirm with «ok».
⇨Determine which connector (1 or 2) at the control unit is used to connect the footswitch.
⇨Select «Foot/handswitch connector 1» or «Foot/handswitch connector 2» under «User settings» and confirm with «ok».
⇨Select «Set foot/handswitch type» under «Function» and confirm with «ok».
⇨Select the desired type under «Foot/handswitch type» and confirm with «Save».

Changing settings for footswitch 1/2

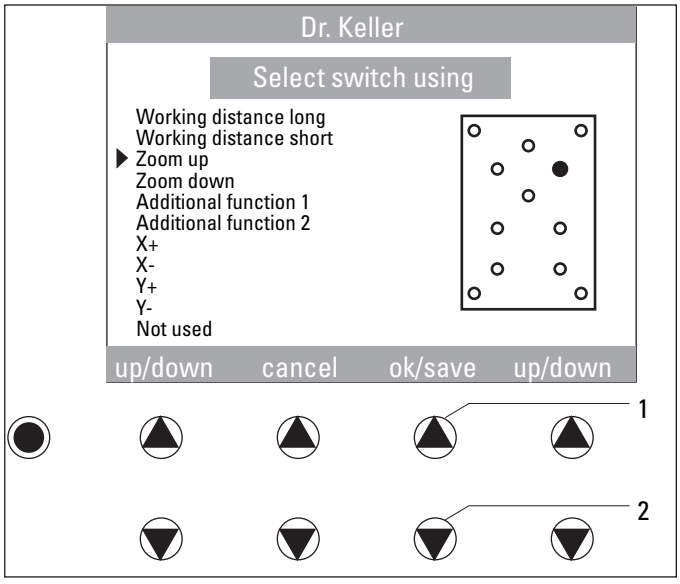
Always pay attention to the title line. It displays the name of the doctor who just saved the settings which were called up. This is to prevent the settings of other doctors from being changed or deleted.

⇨Go to «Change user» in main menu 1 and confirm with «ok». A list of names appears for doctors who have saved settings at the microscope.
⇨Select the name of the doctor under «Select user» and confirm with «ok».
The settings of the selected doctor are active and the eyebase, dioptre numbers and eyepiece magnification entered by the doctor appear in the display.
⇨Continue with «ok».
⇨Select «User settings» in main menu 2 and confirm with «ok».
⇨Select «Foot/handswitch connector 1» or «Foot/handswitch connector 2» under «User settings» and confirm with «ok».

User configuration:

There are two footswitch configuration variants: «Standard configuration» and «User configuration». With the «standard configuration», certain configurations of the keys and pedals are suggested and can be saved. With the «User configuration» variant, the pedals can be configured as desired.

⇨Select «User configuration footswitch» under «Function» and confirm with «ok».
⇨Select the desired pedal (❍ becomes ●) under «Select switch» with the right arrow keys under «up/down» in the sketch in the display.
⇨Select the desired function with the left arrow key under «up/down» (e.g. «focus up»).
⇨Confirm with «ok», i.e. upper arrow key (1), and select the next pedal.



⇨When all functions have been selected and confirmed with «ok», save the setting with «Save», i.e. lower arrow key (2). The configuration is now saved for the selected doctor.

From a user configuration back to the standard configuration:
⇨Select the «Standard configuration foot/handswitch» under «Function» and confirm with «ok».
⇨Accept the recommended configuration with «Save».
The standard configuration of the selected function is displayed in the sketch (❍ becomes ●).

Performing function check on footswitch

A function test can be performed to check the configuration of the footswitch.
⇨Select «User settings» in main menu 2 and confirm with «ok».
⇨Select «Foot/handswitch connector 1» or «Foot/handswitch connector 2» under «User settings».
⇨Select «Control foot/handswitch functions» under «Function» and confirm with «ok».
⇨Press any button on the footswitch.
The set function with an arrow symbol ► is displayed to the left and the ❍ symbol in the symbol picture on the right changes to ●.

Setting focus and zoom speed, focus and zoom position and eyepiece magnification

☞ Always pay attention to the title line. It displays the name of the doctor who just saved the settings which were called up. This is to prevent the settings of other doctors from being changed or deleted.

⇨Select «User settings» in main menu 2 and confirm with «ok».
⇨Select «Microscope» under «User settings» and confirm with «ok».
⇨Select either «Focus speed and position», «Zoom speed and position» or «Eyepiece magnification» under «Function» and confirm with «ok».
⇨Set the desired value with «+/–» and accept with «Save».

Changing contrast and brightness of control device display

⇨Go to «Change user» in main menu 1 and confirm with «ok». A list of names appears for doctors who have saved settings at the microscope.
⇨Select the name of the doctor under «Select user» and confirm with «ok».
The settings of the selected doctor are active and the dioptre values, eye-base and eyepiece magnification of the selected doctor are shown in the display.
⇨Continue with «ok».
⇨Select «User settings» in main menu 2 and confirm with «ok».
⇨Select «Control unit» under «User settings» and confirm with «ok».
⇨Select «Screen contrast/illumination» under «Function» and confirm with «ok».
⇨Select «Screen contrast» or «Background illumination» with the arrow keys, set the desired value with «+/–» and confirm with «Save».

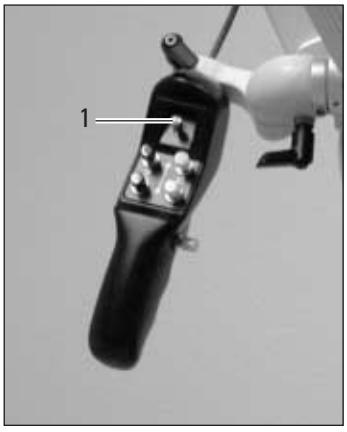
Entering or changing user name

⇨Go to «Change user» in main menu 1 and confirm with «ok». A list of names appears for doctors who have saved settings at the microscope.
⇨Select the name of the doctor under «Select user» and confirm with «ok».
The settings of the selected doctor are active and the dioptre values, eye-base and eyepiece magnification of the selected doctor are shown in the display.
⇨Continue with «ok».
⇨Select «User settings» in main menu 2 and confirm with «ok».
⇨Select «Control unit» under «User settings» and confirm with «ok».
⇨Select «User name» under «Functions» and confirm with «ok».
⇨Place the flashing cursor under the desired code with <–/–>.
⇨Select the code to be set in the code table with «Code +/–» (code has black background) and set it with «Set/ins».
The code is inserted into the line and the cursor jumps to the next free position.
⇨Search for and insert next code.

If the user name is entered:
⇨Select «Done/del».
«Save, continue or cancel» appears on the status line.
⇨Select the desired function with the arrow keys.

Changing settings for handgrips (joystick and brakes)

The joystick (1) can be configured for the XY movement of the microscope or for menu control when using a DI C500.
Setting configuration of joystick:



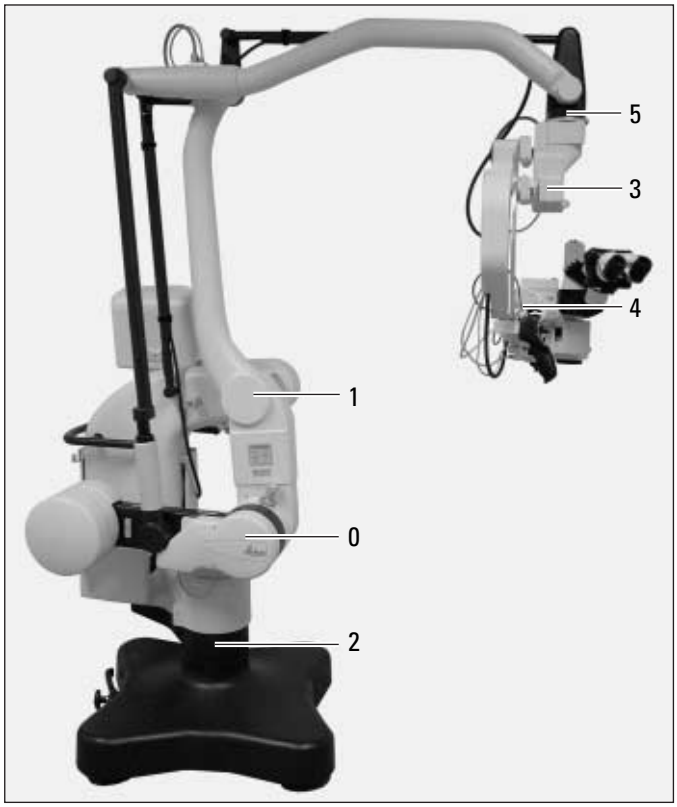
⇨Go to «User settings» in main menu 2 and confirm with «ok».
⇨Select «Left handgrip» or «Right handgrip» under «User settings» and confirm with «ok».
⇨Select «X/Y» or «DIC» under «Right handgrip» / «Left handgrip» and confirm with «Save».

Setting brake combination:

Three of the six brakes of the Leica M500 OH3 surgical microscope can be released in combination at the selector button (1).

Brake No.	Position
0	Up/down in parallelogram
1	Forward/backward in parallelogram
2	At base
3	In C sledge of microscope carrier
4	At A/B sledges of the surgical microscope
5	In rotatable joint

- Brake Nos. 0, 1 and 2 for moving the stand (XYZ FREE)
- Brake Nos. 3, 4 and 5 for moving the Leica M500 N (FOCUS LOCK) surgical microscope

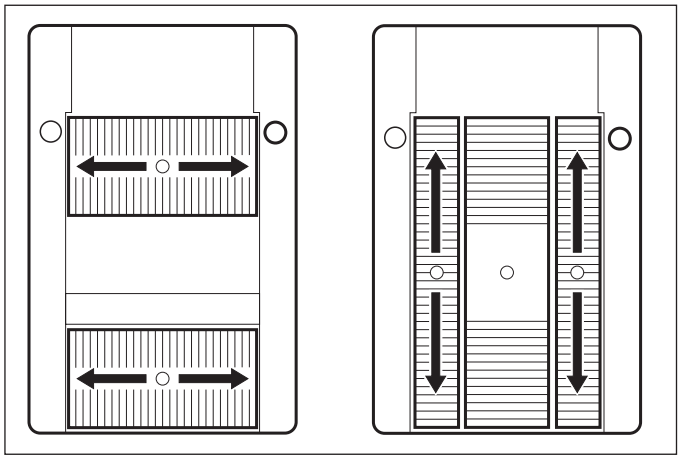


Controlling zoom and focus

Warning
Severe damage to tissue can result from an incorrect working distance!
⇨When working with lasers, always set the working distance of the microscope to the laser distance.

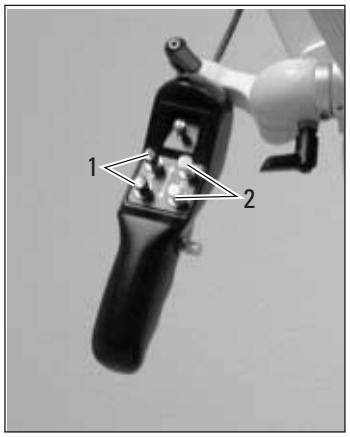
If the zoom or focus motor fails, the zoom or focus can be set manually.

With footswitch



⇨Control zoom and focus by pressing on the pedals.
The pedals are moved crosswise or lengthwise.
The configuration of the buttons and pedals can be selected individually (see the section entitled «Changing settings for footswitch 1/2», Page 25).

With handgrips



Zoom (1)
– Upper button: magnify
– Lower button: reduce

Focus (2)
– Upper button:
increase working distance
– Lower button:
decrease working distance

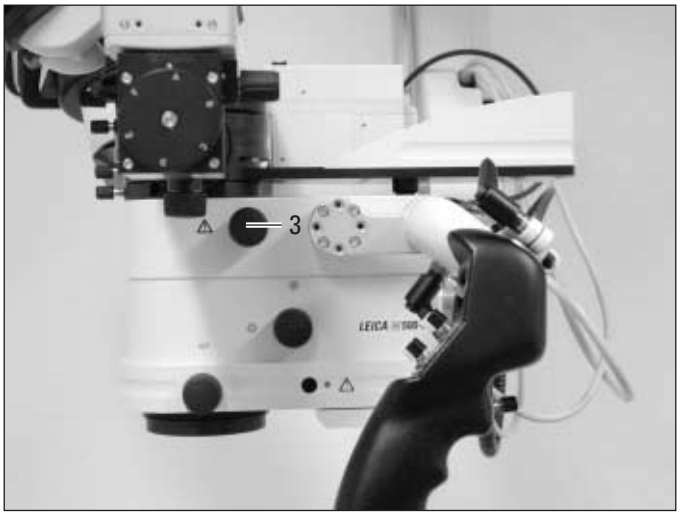
Setting zoom and focus speed

The zoom and focus speed is set at the control unit (see the section entitled «Setting focus and zoom speed, magnification and working distance», Page 24).

Setting zoom manually

Caution
Zoom motor can be permanently damaged!
⇨Only adjust the zoom manually if the zoom motor is defective.

If the zoom motor fails, zooming can be set manually with the rotary knob (3).

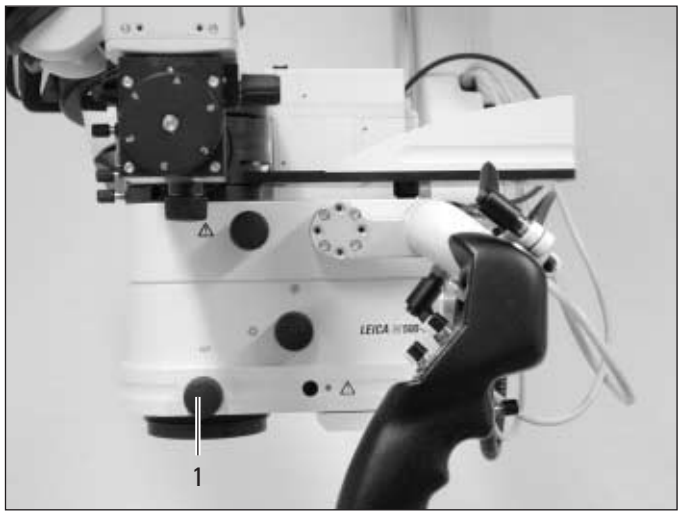


⇨Press rotary knob (3).
⇨Set desired zoom by rotating it.

Adjusting focus manually

Warning
Severe injury to tissue can result from manual adjustment of the working distance!
⇨The rotary knob may not be adjusted for manual adjustment of the working distance while the laser is in use.

If the focus motor fails, focusing can be set manually with the rotary knob (1).

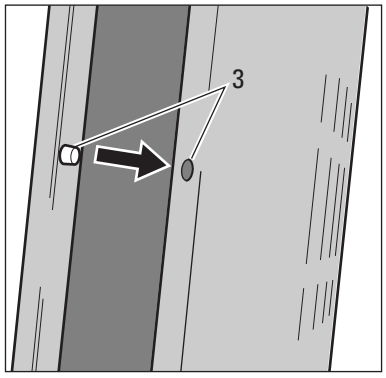


⇨Set the required focus with the rotary knob (1).

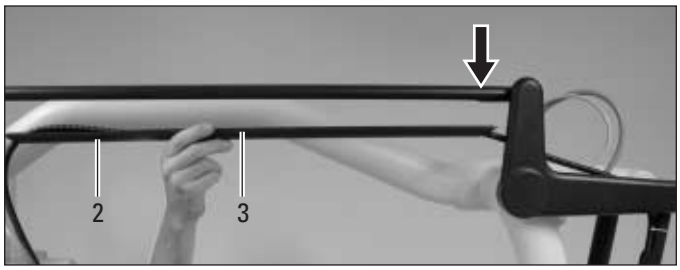
Pulling in additional cables

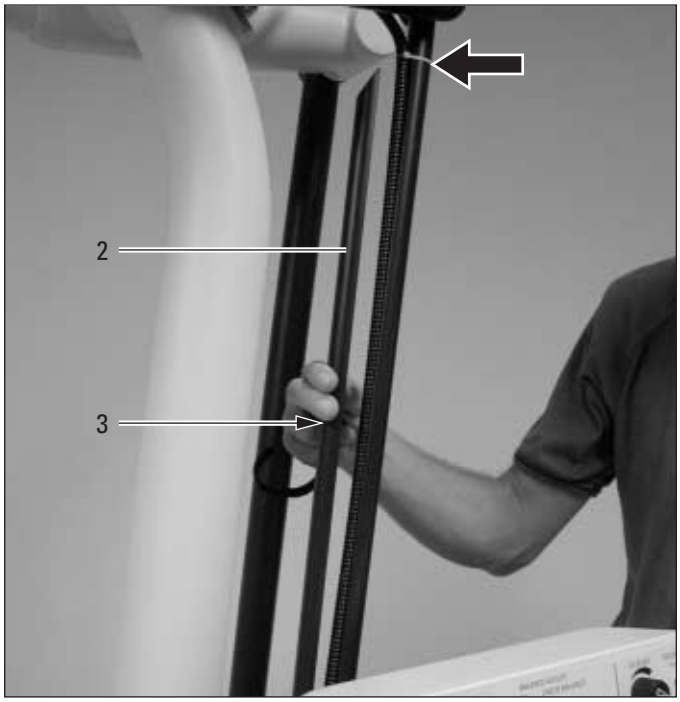
Additional cables can be pulled through the available cable channels of the Leica M500 OH3 for use with accessories (e.g. video, DI C500).

Positioning aids (3) are located at the cable channels (2) and must engage in the counter piece of the cable channel during installation.



⇨Loosen cable channels (2) and pull cables in.
⇨Secure cables in stretched position of the stand using cable ties (see arrows).





⇨Close cable channels again.

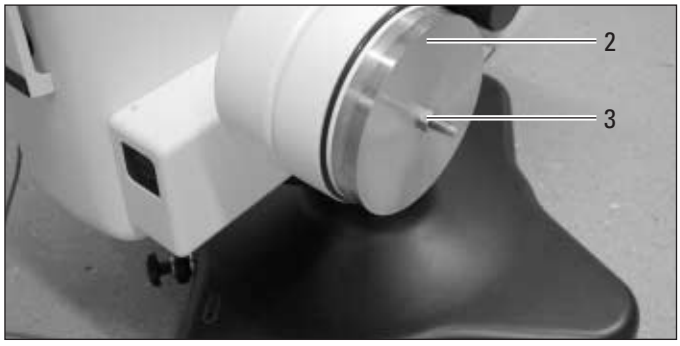
Changing wheel counterweight at D axis

If the Leica M500 OH3 cannot balance out the hardware used, a wheel counterweight must be added or removed.
This is also signalled by the LED (Item 5, Page 10) for balancing the D axis.

Caution
Risk of injury by falling wheel counterweight or cover!
⇨During the change, ensure that your feet are not under the wheel counterweight or the cover.

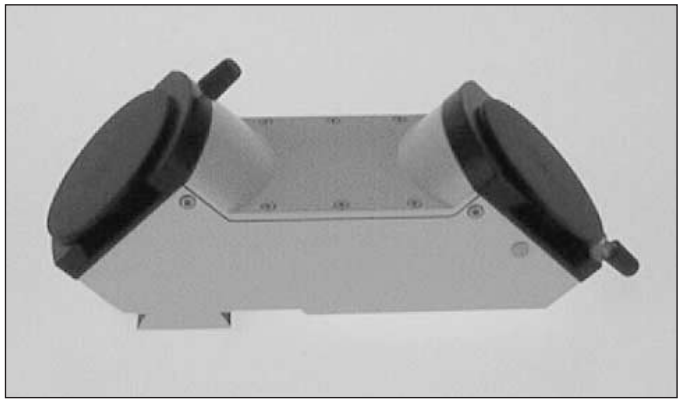
⇨Lock the Leica M500 OH3 (see Page 14).
⇨Turn down cover (1) of axis.

⇨Screw off hex nut (3).



⇨Add or remove wheel (2).
⇨Screw on hex nut (3).
⇨Screw cover (1) back on.

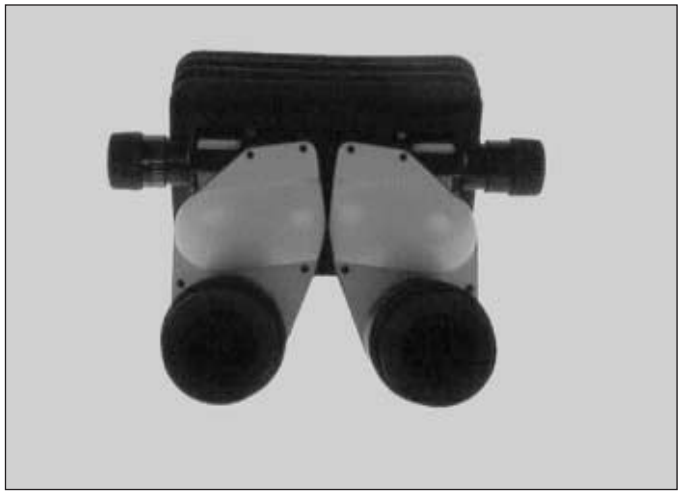
180° dual stereo attachment



- allows a second person to view
- attached to the optics carrier

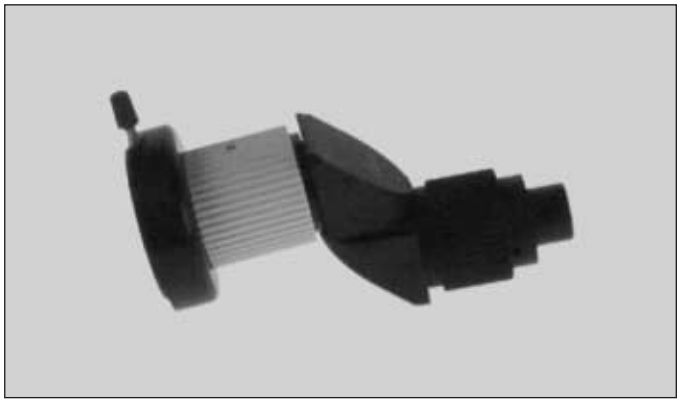
The following can be attached to the 180° dual stereo attachment:
- binocular tube, can be tilted 30°–150°
- beam splitter
- 30° rotating ring
- additional binocular tubes
  Light distribution: 50 % on each side

Binocular tube; can be tilted; with variable viewing angles 30°–150°



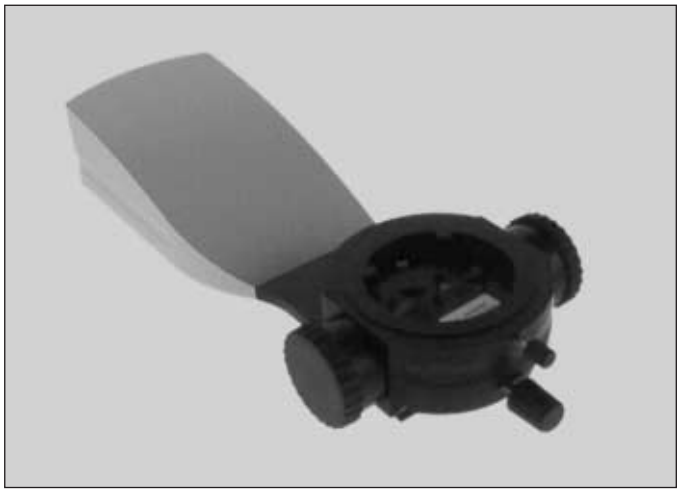
- with pupil-base adjustment for the eye-base
- focal length f = 170 mm
- integrated eyepieces with dioptre adjustment and built-in eyecup adjustment

Stereo/second-observer attachment



- attached to beam splitter

Beam splitter with counterweight

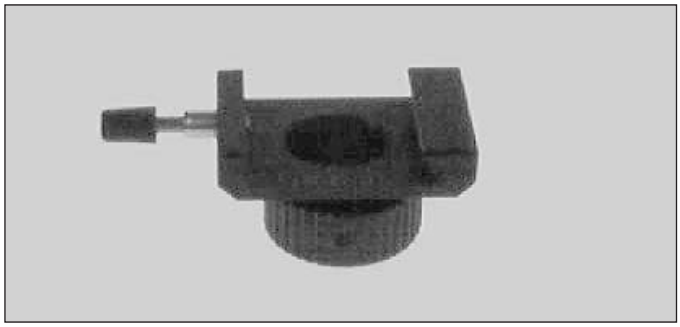


- allows viewing by a second person or documentation
  Light distribution: 50 % on each side

Video-zoom tube

- attached to beam splitter

Adapter piece for accessories of the M 600 series

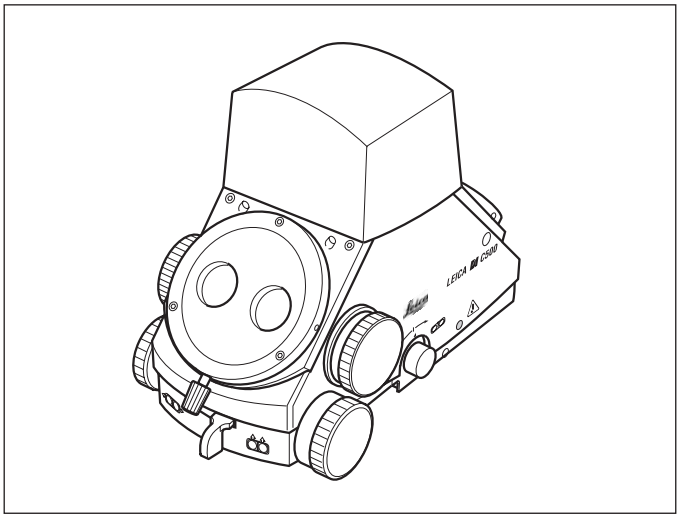


- attached to beam splitter of M 500-N surgical microscope

Beam splitter

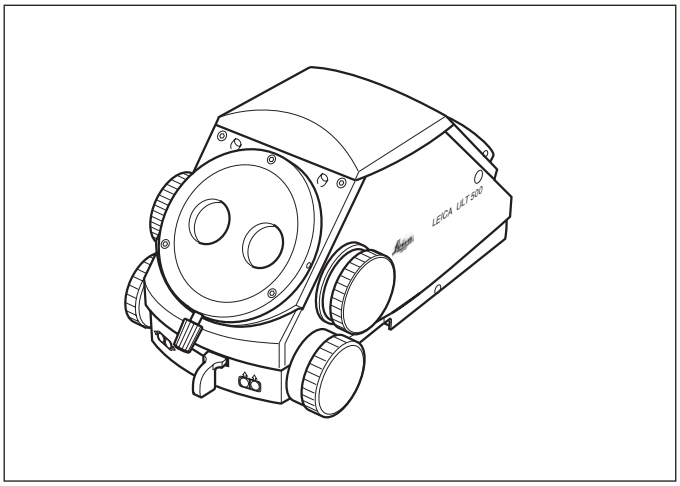
- allows viewing by a second person or documentation
  Light distribution: 50 % on each side

Dual Imaging Color Module DI C500



- beam splitter with eight optical outputs
- built-in colour display superimposes data or video images

Ultra Observer ULT500



- beam splitter with eight optical outputs

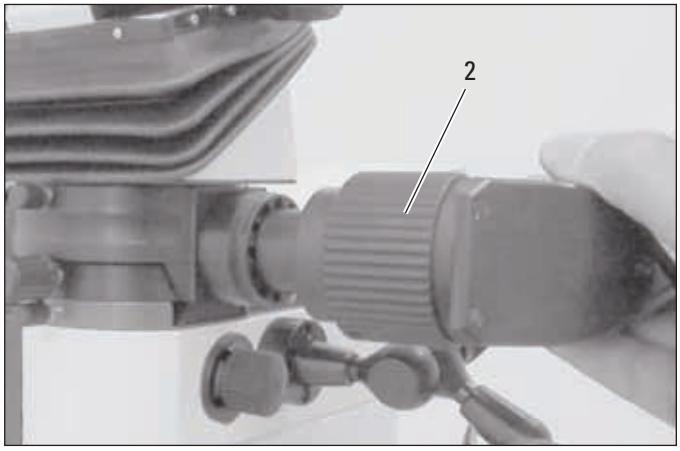
Mounting accessories

Warning
Risk of injury from tilting surgical microscope!
- ⇨Never change the accessories or attempt to rebalance the microscope while it is over the field of operation.
- ⇨Lock the Leica M500 OH3 each time before changing accessories.
- ⇨Balance out the Leica M500 OH3 each time after changing accessories.
- ⇨Do not release brakes in an unbalanced state.

Mounting 90° stereo attachment, binocular tube and beam splitter

⇨Loosen clamping screw (1).
⇨Place accessory into the dovetail ring from above.
⇨Tighten clamping screw (1).

Mounting stereo second-observer attachment and video-zoom tube



⇨Insert accessory and check whether the connection is engaged.
⇨Tighten locknut (2) by hand.

The Leica surgical microscope is a state-of-the-art system. Nevertheless, hazards may still arise during operation.
⇨For this reason, you must always follow the directions given in this user manual and particularly the safety precautions.

Intended use of instrument

- The Leica surgical microscope system is an optical instrument which uses magnification and illumination to improve the display of objects. It can be used for observation, documentation as well as in human and veterinary surgery.
- The Leica surgical microscope is only to be used on a strong floor in a closed room.

Directions for the person responsible for the instrument

⇨Ensure that the surgical microscope is used only by qualified personnel.
⇨Ensure that this user manual is always available at the place where the surgical microscope is used.
⇨Carry out regular inspections to make sure the user is complying with safety requirements.
⇨Brief the user thoroughly and explain the meaning of the hazard signs and safety instructions.
⇨Allocate responsibilities for getting the instrument ready for work, for operating it and for maintaining it. Monitor compliance with this.
⇨Do not use the surgical microscope system unless it is in proper condition.
⇨If any faults develop which might put the safety of people at risk, immediately contact your Leica representative or Leica Microsystems (Switzerland) Ltd., BU SOM, 9435 Heerbrugg, Switzerland.
⇨If you use accessories from other manufacturers with the Leica surgical microscope, ensure that the manufacturer confirms that the combination is safe to use, and observe the user manual.
⇨Modifications and maintenance work may only be performed by professionals expressly authorised by Leica.
⇨When commencing maintenance work, only original Leica parts are to be used.
⇨After maintenance or technical modifications, the device must be readjusted in accordance with our technical specifications.
⇨If the device is modified or maintenance has been performed by unauthorised personnel, if the equipment is improperly maintained (providing the maintenance was not performed by us) or if the device has been operated improperly, Leica is relieved of all liability.
⇨The effect of the surgical microscope on other instruments has been tested as specified in EN 60 601-1-2. The system has passed the tests relating to emissions and immunity. Comply with the usual precautionary and safety measures relating to electromagnetic and other forms of radiation.

Directions for the user

⇨Follow the instructions given in this manual.
⇨Follow the instructions given by your employer regarding the organisation of work and safety at work.

Dangers of use

Warning
Risk of injury by:
- **Uncontrolled swinging out of swing arm!**
- **Tilting of the stand!**
- **Feet in lightweight shoes can become trapped beneath the base!**

⇨When transporting the surgical microscope, always return it to the transport position.
⇨Always push the surgical microscope; never pull it.

Caution
Microscope can be damaged by uncontrolled tilting over!
⇨Hold the handgrips firmly before pressing the ALL-FREE button.

Warning
Mortal danger from electrical shock!
⇨Connect the Leica M500 OH3 surgical microscope to an earthed outlet only.

Warning
Risk of injury from tilting surgical microscope!
⇨Never change the accessories or attempt to rebalance the microscope while it is over the field of operation.
⇨Lock the Leica M500 OH3 each time before changing accessories.
⇨Balance out the Leica M500 OH3 each time after changing accessories.
⇨Do not release brakes in an unbalanced state.

Warning
Surgical microscope can move without warning!
⇨Always set footbrakes, except during transport.

Warning
Risk of injury by movements of the microscope during balancing out.
⇨Do not remain in the immediate vicinity of the microscope during balancing out.

Warning
Severe damage to tissue can result from an incorrect working distance!
⇨When working with lasers, always set the working distance of the microscope to the laser distance and lock it there.

Warning
Severe injury to tissue can result from manual adjustment of the working distance!
⇨The rotary knob may not be adjusted for manual adjustment of the working distance while the laser is in use.

Caution
Risk of infection!
⇨Provide sufficient open space around the base to prevent the sterile cover being touched by non-sterile parts.

Caution
Zoom motor can be permanently damaged!
⇨Only adjust the zoom manually if the zoom motor is defective.

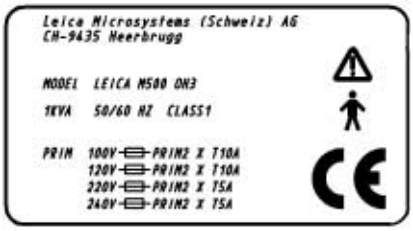
Caution
Risk of injury by falling wheel counterweight or cover!
⇨During the change, ensure that your feet are not under the wheel counterweight or the cover.

Caution
Risk of burns!
The lamp insert gets very hot.
⇨Check that the lamp insert has cooled before you remove the lamp.

Labelling

1

3



5

Grounding reliability can only by achieved when EQUIPMENT is connected to equivalent recentable marked "Hospital only" or "Hosptial Grade".

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2

DO NOT USE IN OPHTALMOLOGY

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4

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S/N TTMMJJxxx
Made in JP

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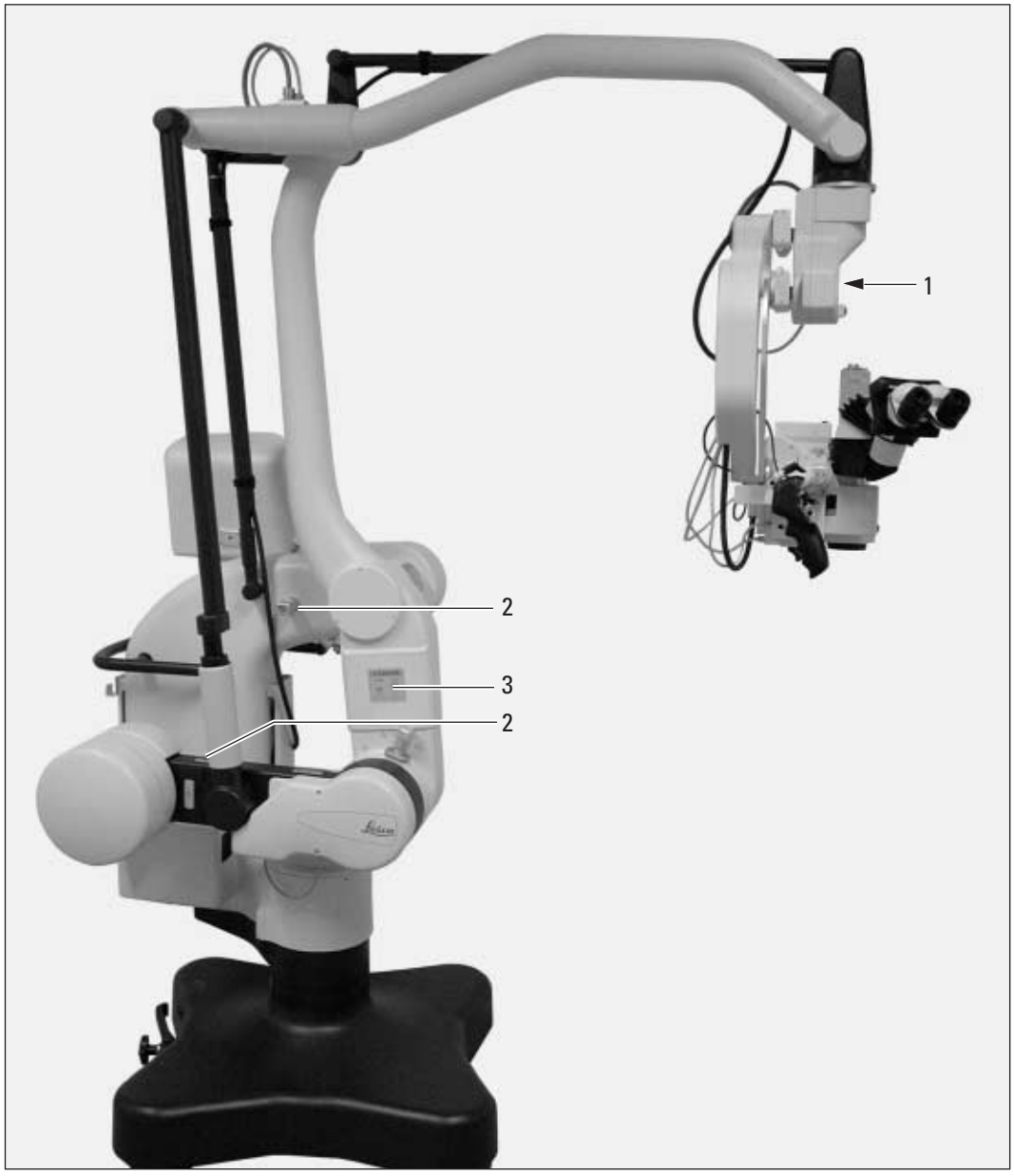


1 Only to be operated by trained personnel

2 Danger of squeezing fingers

3

Care instructions

- Put a dust cover over the instrument during breaks in work.
- Keep accessories in a dust-free place when not in use.
- Remove dust with a pneumatic rubber pump and a soft brush.
- Clean the objectives and eyepieces with special optics cleaning cloths and pure alcohol.
- Protect the surgical microscope from damp, vapours, acids, alkalis, and corrosive substances.
  Do not store chemicals near the instrument.
- Protect the surgical microscope from improper use.
  The mounting of different plugs and the dismantling of optical systems and mechanical components may only be carried out if explicitly required by the instructions.
- Protect the surgical microscope from oil and grease.
  Never oil or grease mechanical parts or sliding surfaces.
- Remove coarse debris with a moistened disposable cloth.
- For disinfecting the surgical microscope, use compounds from the surface disinfecting group on the basis of the following active ingredients:
  - aldehyde,
  - alcohol,
  - quaternary ammonia compounds.

☞ Due to possible damage of the materials, compounds containing the following are not appropriate
- halogen-separated compounds,
- strong organic acids,
- oxygen-separated compounds.

☞ Observe the directions of the manufacturer of the disinfectant.

☞ It is advisable to enter a service agreement with Leica Service.

To retain the reliability of the surgical microscope, we recommend inspecting the product annually covering our detailed checklist.
Please contact your Leica Service representative.

Replacing lamps

⇨Open access hatch (1) for lamp inserts.
The pushbutton for illumination (Item 6, Page 18) flashes orange.

⚠ **Caution**
Risk of burns!
The lamp insert gets very hot.
⇨Check that the lamp insert has cooled before you remove the lamp.

⇨Pull out defective lamp insert (2 or 4) and insert new lamp insert (spare part No. 10 448 022).

☞ When inserting the lamp insert, ensure that the arrow (3) points to the right.

⇨Close access hatch again.
The pushbutton for illumination (Item 6, Page 18) goes out.

Replacing fuses

220 V–240 V range: two 5-A fuses, slow blow
100 V–110 V range: two 10-A fuses, slow blow

⇨Remove cover (1) with screwdriver.

⇨Remove fuses (2) from the fasteners and replace them.

Operational check

Illumination

Always allow the main and backup illuminators to remain lit for at least five minutes, otherwise the lighting capacity will be quickly reduced.

⇨Switch on the power switch.
⇨Check main illuminator and backup illuminator.
⇨Switch back to main illuminator and switch off illumination.

Footswitch

⇨Position footswitch.
⇨Test all functions with the footswitch.

General faults

If the device no longer functions properly,
please contact your Leica representative for advice.

Fault	Cause	Remedy
The microscope tilts when the ALL-FREE button is pressed.	The microscope carrier is not balanced properly.	⇨Balance out microscope carrier (see Page 15).
The microscope cannot be moved, or great force is required to move it.	A cable is clamped.	⇨Re-lay the affected cable.
	The Leica M500 OH3 is locked.	⇨Release lock (see Page 14).
The functions cannot be actuated with footswitches or the controller at the handgrips.	A cable connection has come loose.	⇨Check the power cable. ⇨Check footswitch connection.
	Assignment entered incorrectly at the control unit.	⇨Change the assignment by means of the control unit.
No light in microscope.	The fibre-optic light guide has detached.	⇨Check connection of fibre-optic light guide.
	Main and/or backup illuminator defective.	⇨Switch to other illumination (see Page 18).
The image does not remain sharp.	Eyepieces not properly seated.	⇨Screw eyepieces down completely.
	Dioptrics not set correctly.	⇨Perform dioptre correction exactly according to the instructions (see Page 21).
The microscope or swing arm moves up and down or rotates on its own.	Swing arm not balanced out correctly.	⇨Balance out the Leica M500 OH3 (see Page 15).
	Cables not laid properly or have moved and are putting a strain on the system (possibly an additional video cable).	⇨Lay cables according to installation instructions and relieve tension.
	Leica M500 OH3 was balanced out while locked.	⇨Release locks (see Page 14) and balance out Leica M500 OH3 (see Page 15).
Microscope and microscope carrier can only be moved with great force or not at all.	Automatic balancing was not completed.	⇨Ensure that position B was reached (Page 15/16). ⇨Press the pushbutton for auto balance again.

Fault	Cause	Remedy
Automatic balancing cannot be performed.	Microscope tilted too severely.	⇨Align A/B axes parallel at microscope (see Page 15). ⇨Perform automatic balancing again.
	Protective flap at pushbutton for auto balance was not flipped up before pressing.	⇨Flip up protective flap and press pushbutton for auto balance.
Zoom cannot be adjusted electrically.	Failure of zoom motor.	⇨Press zoom pushbutton. ⇨Adjust zoom by rotating it (see Page 28).
No XY movement possible at one of the two handgrips.	Settings in control unit for joystick of effected handgrip are at DIC.	⇨Set joystick to XY movement (see Page 26).
The microscope is not balanced out exactly in the B axis.	Mounted accessory was not turned back to the working position during balancing out of the B axis.	⇨Balance out B axis again. Ensure that the accessories are turned back to the working position during balancing out of the B axis (see Page 16).
Swing arm cannot be moved.	Swing arm locked.	⇨Release lock (see Page 14).
The stand of the Leica M500 OH3 moves.	Footbrakes not locked.	⇨Engage footbrakes (see Page 14).
The range of movement of the Leica M500 OH3 is limited (swivelling, tilting, rotating, XY movement).	Cables laid to tightly.	⇨Lay cables again (see Leica M500 OH3 installation instructions).
	Video camera was not mounted properly and touches the microscope carrier.	⇨Mount video camera correctly.
Leica M500 OH3 is not balanced out properly.	Position of accessories was changed after balancing out.	⇨Balance out the Leica M500 OH3 (see Page 15).
Leica M500 OH3 cannot be balanced out.	Wheel counterweight used on the D axis cannot compensate for the mounted accessories.	⇨Change wheel counterweight on the D axis (see Page 30).
	Leica M500 OH3 was balanced out in the transport position.	⇨Take the Leica M500 OH3 out of the transport position and balance it out again (see Page 15).

Fault	Cause	Remedy
The image becomes blurry when the magnification is changed.	Parfocality not precisely set.	⇨Set individual dioptre values of the operating doctor (see Page 24).
Focus at microscope cannot be changed.	Switch for multifocal focus switched on.	⇨Switch off multifocal focus (see Page 19). Exception: You are working with a laser micromanipulator, at which this function was set for protection.
The image appears darkened through the microscope at the edge and the illumination field is outside the field of view.	Accessories not mounted precisely.	⇨Mount accessories exactly in the holders (see Page 33).

TV, photography

Fault	Cause	Remedy
Photographs/TV images blurry.	Microscope or video zoom adapter not precisely focussed.	⇨Focus precisely; use a graticule if necessary. ⇨Perform dioptre correction exactly according to the instructions.
The photographs have a bluish cast.	The wrong film type was used.	⇨Use daylight film.

Error messages at control unit

Fault	Cause	Remedy
Microscope needs initialisation	Microscope initialisation has failed.	⇨Select «Initialise microscope» in main menu 2 and confirm with «ok».
Microscope initialisation failed	Microscope initialisation has failed.	⇨Select «Initialise microscope» in main menu 2 and confirm with «ok».
No status response from microscope	Connection from stand to microscope interrupted, connection cable defective.	⇨Check connection cable and replace if necessary.

Electrical data

Power connection for Leica M500 OH3:	1000 VA 50/60 Hz 100 V (+10 %/–15 %) 120 V (+10 %/–15 %) 220 V (+10 %/–15 %) 240 V (+10 %/–15 %)
Protection class:	class 1
Protection type:	type B

Leica M500 N

Microscope

Magnification changer:	zoom 6:1, motor-driven
Working distances:	207–407 mm; motor-driven multifocal eyepiece; continuously adjustable; can be adjusted manually
Focusing:	with motor-driven multifocal eyepiece; can be adjusted manually
Eyepieces:	wide-field eyepieces for spectacle wearers 10x; 12.5x dioptre adjustment ±5 dioptres; with adjustable eyecup
Objectives:	multifocal eyepiece; working distance – continuously adjustable from 207–407 mm (with motor)
Illumination:	to the illumination system adapted for microsurgery; diameter and brightness of the illumination field with manually-variable zoom optics Main illuminator and backup illuminator: high-power 300 W xenon lamp; entirely independent electrically; brightness control via six-step rotary switch at constant colour temperature
Microscope control unit:	graphical LCD with background lighting; individual user settings can be saved for up to eight users; in-built self-diagnosis system

Optical data

Total magnification:	with 10x eyepiece: 1.4x to 13.7x
Field of view (dia. in mm):	with 10x eyepiece: 16 to 150

Microscope carrier

Rotation range:	540°
Balancing:	ABC axes fully automatic, each can be corrected manually
Brakes:	one brake for A/B axis one brake for C axis

Fibre-optic cable

Length:	4500 mm
Active diameter:	7 mm
Minimum bending radius:	35 mm

Accessories

Binocular tube:	variable viewing angles 30°–150°; in-built eye-base adjuster with fixed setting to 45° or variable viewing angles 0°–180°
Beam splitter:	two side outlets with light distribution 50 % to 50 % or 70 % to 30 %
Video-zoom tube:	zoom 3:1; focal lengths 35–100 mm; with C mount; can be focussed individually
Viewing by a second person:	180° dual stereo attachment with light distribution 70 % to 30 % or stereo second-observer attachment for beam splitter or Leica ULT500 or Leica DI C500

Floor stand

Model:	floor stand with fully-automatic balancing system and six electromagnetic permanent magnetic brakes
Use:	carries and positions the Leica M500 N surgical microscope
Brakes:	six electromagnetic brakes; actuation via pushbutton on handgrip
Balancing:	automatic balancing in all axes and directions
Handgrips:	zoom adjustment working distance adjustment for multifocal objective ALL-FREE button releases all six brakes on stand side selector button configurable with three user-defined brakes motorised XY adjustment or navigation of DI C500 functions via joystick
Stand control unit:	main/backup illuminator triggering automatic balancing status display of balancing manual balancing of D axis setting XY speed switchover FOCUS LOCK - XYZ FREE
Load:	min. 8.0 kg and max. 11.7 kg from dovetail microscope interface
Space requirement:	Foot: 720 x 720 mm min. height in parked position: 1850 mm
Weight:	approx. 266 kg with full load
Range:	Cantilever: max. 1520 mm

Standards

EN 60601-1
EN 60601-1-2
UL 2601-1

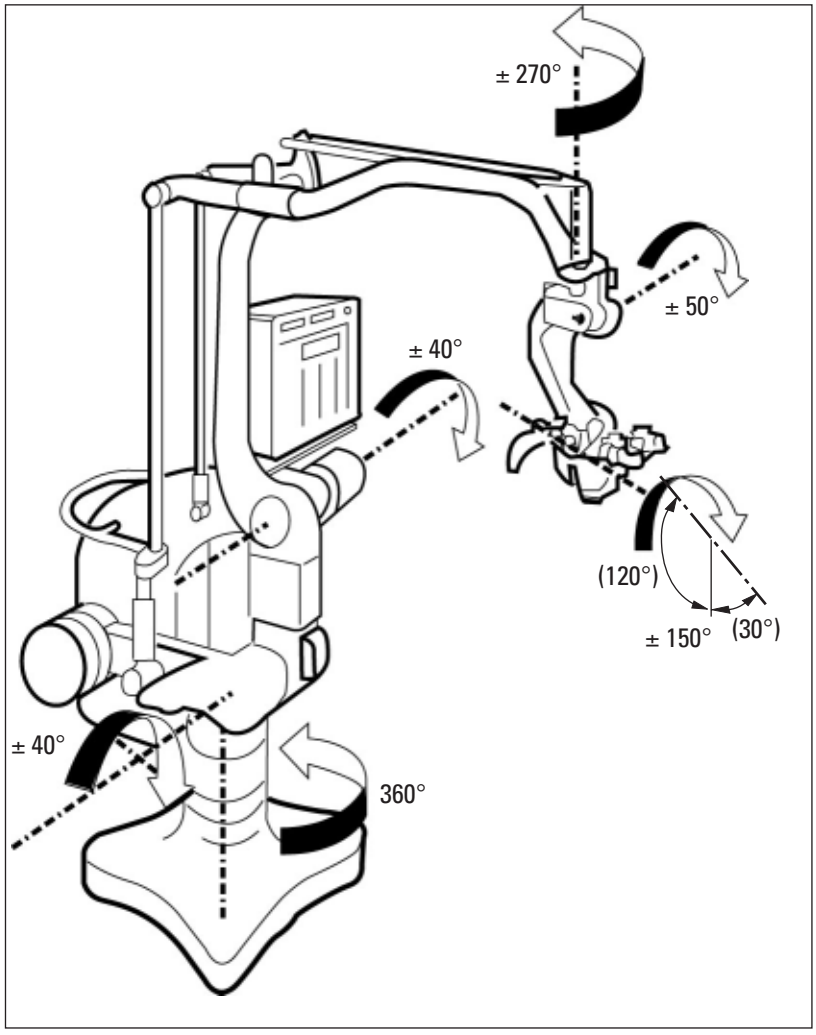
Environmental conditions

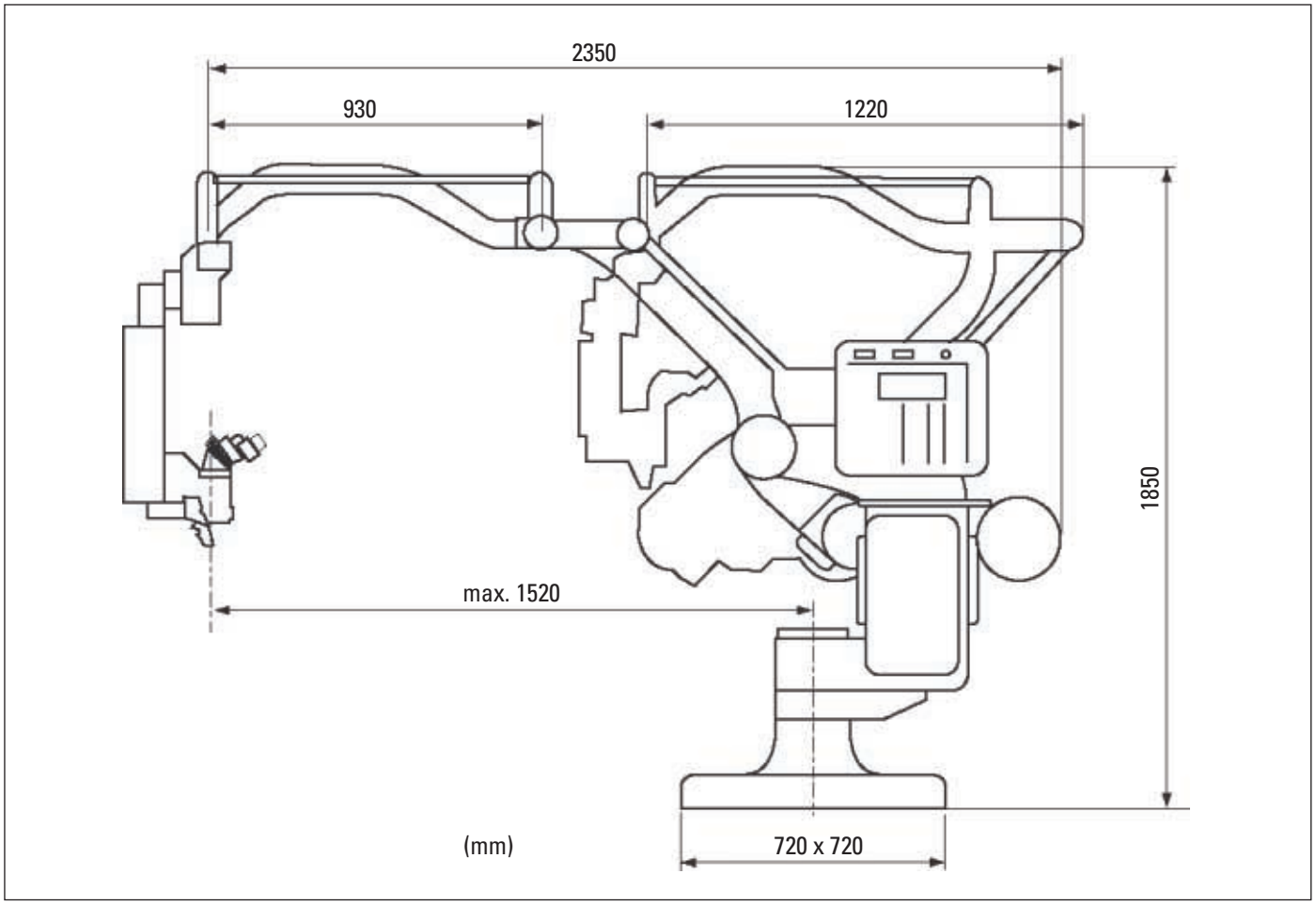
Use:	+10 °C to +40 °C +50 °F to +104 °F 30 % to 95 % relative humidity 500 mbar to 1060 mbar air pressure
Storage:	–40 °C to +70 °C –40 °F to +158 °F 10 % to 100 % relative humidity 500 mbar to 1060 mbar air pressure

Limitations on use

The Leica M500 OH3 is only for use in closed rooms and on a strong floor.

Dimensional drawings




2350
930
1220
1850
max. 1520
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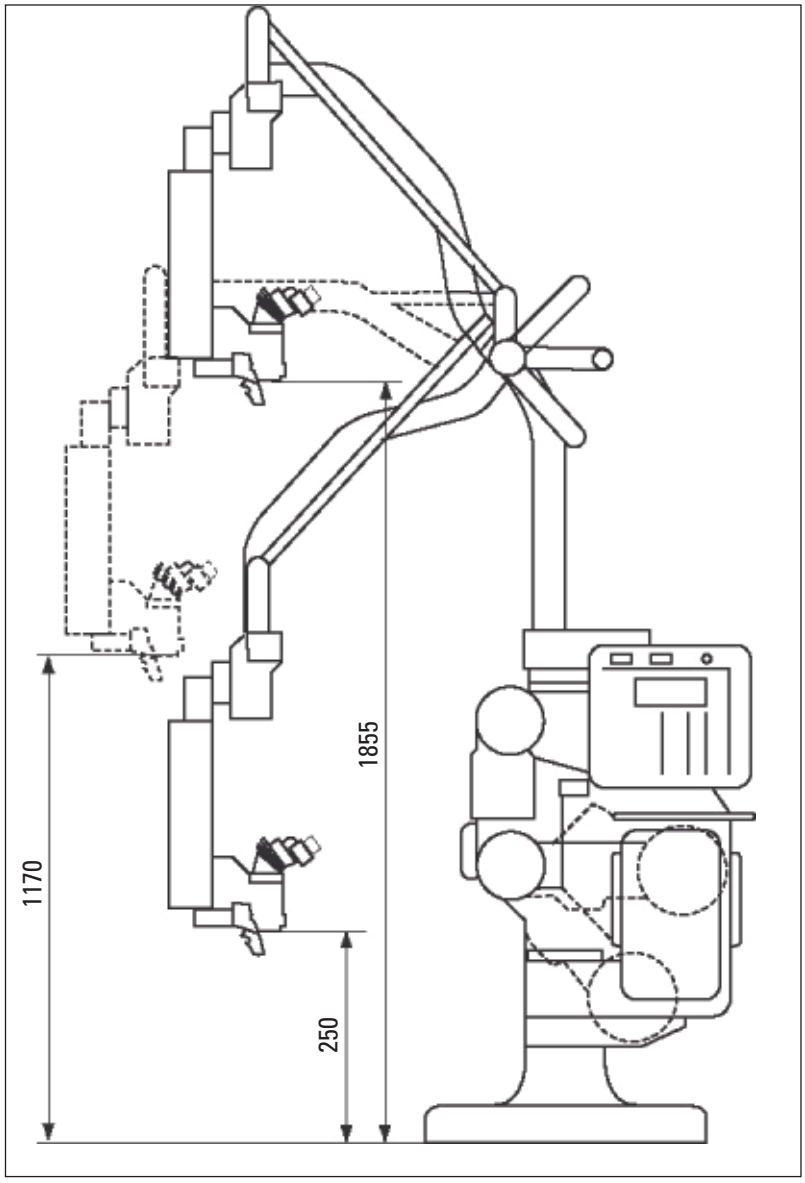
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Leica Microsystems' Mission is to be the world's first-choice provider of innovative solutions to our customers' needs for vision, measurement, lithography and analysis of microstructures.

Leica, the leading brand for microscopes and scientific instruments, has developed from five brand names, all with a long tradition: Wild, Leitz, Reichert, Jung and Cambridge Instruments. Leica symbolizes not only tradition, but also innovation.

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Germany	Bensheim	Tel. +49 6251 136 0	Fax +49 6251 136 155
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Korea	Seoul	Tel. +82 2 514 65 43	Fax +82 2 514 65 48
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and representatives of Leica Microsystems in more than 100 countries.

The Business Unit SOM, within Leica Microsystems, holds the management system certificates for the international standards ISO 9001 and ISO 14001 / EN 46001 relating to quality management, quality assurance and environmental management.

CE

EU-Authorized representative:

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DE-35578 Wetzlar
Tel. +49 6441-290, Fax +49 6441-29 33 99

The companies of the Leica Microsystems Group operate internationally in five business segments, where we rank with the market leaders.

Microscopy
Our expertise in microscopy is the basis for all our solutions for visualization, measurement and analysis of microstructures in life sciences and industry.

Specimen Preparation
We specialize in supplying complete solutions for histology and cytopathology.

Imaging Systems
With confocal laser technology and image analysis systems, we provide three-dimensional viewing facilities and offer new solutions for cytogenetics, pathology and material sciences.

Medical Equipment
Innovative technologies in our surgical microscopes offer new therapeutic approaches in microsurgery. With automated instruments for ophthalmology, we enable new diagnostic methods to be applied.

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